

UNIVERSAL
LIBRARY

OU_172766

UNIVERSAL
LIBRARY

NATIONAL PLANNING COMMITTEE SERIES

The National Planning Committee Series will consist of Reports of the various Sub-Committees, each of which deals with the several aspects of the national life. Each Sub-Committee consists of recognised Experts in the subject; and every Report prepared by them considers all the bearings, implications, and consequences of the subject. Together the Series will make a comprehensive outline of an all-embracing National Plan, which, if and when implemented, would revolutionise the conditions of life in this country. Though most of the Reports were prepared in 1939-40, each is prefaced by an Introduction showing the place of the subject in the entire Scheme of National Planning, and ended by a Summary of Developments which brings the matter fairly up to date.

LIST OF MEMBERS
of
NATIONAL PLANNING COMMITTEE
(Including Representatives of Governments)

JAWAHARLAL NEHRU (Chairman)

Sir M. Visveswaraya, (Resigned)	J. C. Kumarappa, (Resigned)
Sir Purshottamdas Thakurdas	Walchand Hirachand
Dr. Megh Nad Saha	Dr. Radha Kamal Mukerjee
A. D. Shroff	Prof. J. C. Ghosh,
A. K. Shaha	Hon'ble Mr. Shuaib Qureshi
Dr. Nazir Ahmad	Rani Laxmibai Rajwade
Dr. V. S. Dubey	Abdur Rahman Siddiqui
Ambalal Sarabhai	Gulzarilal Nanda
N. M. Joshi	Mrs. Vijayalakshmi Pandit
K. T. Shah, (Hon. Gen. Sec.)	

Members

Hon. Mr. V. V. Giri, Minister for Industries, Madras
Hon. Mr. L. M. Patil, Minister for Industries, Bombay
Hon. Dr. Syed Mahmud, Minister for Education and
Development, Bihar
Hon. Mr. C. J. Bharuka, Minister for Industries,
Central Provinces

Director of Industries, Bombay
Director of Industries, Bihar
Director of Industries, Assam
Minister in Charge of Industries, Bhopal
Director of Industries, Hyderabad, Dn.
Director of Industries, Mysore
Development Commissioner, Baroda
Director of Industries, Baroda

COMMUNICATIONS

NATIONAL PLANNING COMMITTEE SERIES

Rural Marketing and Finance

River Training and Irrigation

Soil Conservation and Afforestation

Land Policy, Agricultural Labour and Insurance

Animal Husbandry and Dairying, Horticulture and Fisheries

Crops—Planning and Production

Rural and Cottage Industries

Power and Fuel

Chemical Industries

Mining and Metallurgical Industries

Manufacturing Industries

*Industries connected with Scientific Instruments and
Engineering Industries*

Labour

Population

Trade—(Internal and Foreign)

Public and Industrial Finance

Currency, Exchange and Banking

Insurance (Individual and Social)

Transport (Road, Rail, Air and Water)

Communications (Posts, Telegraphs, Telephones and Radio)

National Housing

Public Health

Education—General and Technical

Woman's Role in Planned Economy

NATIONAL PLANNING, PRINCIPLES & ADMINISTRATION

K. T. Shah.

NATIONAL PLANNING COMMITTEE SERIES
(Report of Sub-Committee)

COMMUNICATIONS

Chairman

Sir Rahimtulla Chinoy

Secretary

Dr. S. K. Mitra

Edited by

K. T. Shah

Honorary General Secretary

NATIONAL PLANNING COMMITTEE

VORA & CO., PUBLISHERS LTD.
3, ROUND BUILDING, KALBADEVI ROAD, BOMBAY 2.

Price Rs. 6/- only

To
All Those
MEMBERS OF THE NATIONAL PLANNING COMMITTEE
and of
Its Various Sub-Committees
A TRIBUTE OF APPRECIATION

प्रारब्धमुत्तमजना न परित्यजन्ति

PERSONNEL OF THE SUB-COMMITTEE ON
COMMUNICATIONS

Chairman

Sir Rahimtulla Chinoy

Secretary

Dr. S. K. Mitra

Members

Shri S. R. Kantebet

Shri H. P. Bhaumik

Shri S. P. Chakravarti

Dr. G. R. Toshniwal

Rai Bahadur P. N. Mukerji

Rao Bahadur C. V. Krishnaswami Chetty

PREFACE

The National Planning Committee, appointed in 1938, began its work early in 1939. After defining the nature of a National Plan, and determining the nature and scope of the work entrusted to them, the Committee issued an elaborate and comprehensive Questionnaire which was subsequently supplemented by specific details. Twenty-nine Sub-Committees, formed into eight groups, were set up with special terms of reference to deal with all parts and aspects of the national life and work in accordance with a predetermined Plan.

After some unavoidable delay in getting replies to the Questionnaire, the Sub-Committees began their work, and submitted Reports,—some of them Final, some Interim,—which were considered at the Plenary Sessions of the Parent Committee in 1940. Towards the end of that year the Chairman, Pandit Jawaharlal Nehru, was arrested and sentenced to a long term of imprisonment, during which the work of the Committee had necessarily to be suspended.

On his release a year later, hope revived for an intensive resumption of the Committee's work. But the outbreak of war with Japan, the threat to India's own safety, and the hectic march of political events, rendered it impossible to devote any attention to such work at that time. It, therefore, inevitably went into cold storage once again; and remained for the duration of the war.

When at last the War seemed nearing its end, Pandit Jawaharlal Nehru with other leaders was released. The moment seemed again opportune to resume the work of

the Planning Committee. Meetings of that Body were held in September and November 1945, when certain more urgent questions, already included in the programme of the National Planning Committee, were given a special precedence. A Priority Committee was appointed to report upon them. Changes and developments occurring during the War had also to be taken into account; and another Committee was appointed to review the general instructions, given six years earlier to the Sub-Committees. Revised instructions were issued to them following the Report of this Sub-Committee; and the Chairmen and Secretaries of the several Sub-Committees were once again requested to revise and bring up to date such of the Reports as had already been submitted—either as final or interim—while those that had not submitted any reports at all were asked to do so at an early date.

As a result, many of the Sub-Committees which had not reported, or had made only an Interim Report, put in their Reports, or finalised them. The Parent Committee has had no chance to review them, and pass resolutions on the same. But the documents are, by themselves, of sufficient value, prepared as they are by experts in each case, to be included in this Series.

The following Table shows the condition of the Sub-Committees' work, and the stage to which the Planning Committee had reached in connection with them.

Serial No.	Name of the Sub-Committee.	Final Report		Interim Report		No Reports
		N.P.C. Resolutions	Not considered by N.P.C.	N. P. C. Resolution	Not considered by the N.P.C.	
Agriculture & other Sources of Primary Production		Handbook		Handbook		
Group I.	tion	Pp.		Pp.		
1.	Rural Marketing and Finance	97-99				
2.	River Training and Irrigation	83-85				
3.	" " Part I	113-115				
4.	" " Part II	115-119				
5.	Soil Conservation and Afforestation					
6.	Land Policy and Agriculture					
7.	Animal Husbandry and Dairying	87-89		139-141	do.	
8.	Crop Planning and Production	102-103				
Group II	Horticulture					
	Fisheries					
	Industries or Secondary Sources of Production					
1.	Rural and Cottage Industries		do.			
2.	Power and Fuel					
3.	Chemicals					
4.	Mining and Metallurgy			77-79	do.	
5.	Engineering Industries			130-133		
6.	Manufacturing Industries	75-77	do.			
7.	Industries connected with Scientific Instruments		do.			
Group III	Human Factor					
1.	Labour	89-92				
2.	Population	85-87				
Group IV	Exchange and Finance					
1.	Trade					
2.	Public Finance					
3.	Currency and Banking			122-126		
4.	Insurance			93-95		
Group V	Public Utilities			95-97		
1.	Transport	.				
2.	Communications					
Group VI	Social Services—Health and Housing	126-129		120-122		
1.	National Housing					
Group VII	Education					
1.	General Education			133-139	do.	
2.	Technical Education					
Group VIII	Woman's Role in Planned Economy					

To sum up, fourteen Sub-Committees had made final reports, of which ten have been considered, and Resolutions taken upon them, by the National Planning Committee. Twelve more have presented Interim Reports, of which nine have been considered by the Planning Committee, with Resolutions thereon, while three Sub-Committees have not yet presented any report on the reference made to them.

The idea that all this material, gathered together with the help of some of the best brains in India in the several departments of our national life, should be printed and published was before the Committee from the start. But the interruption caused by the war prevented its realisation. It was once again mooted in 1941; but the moment was not deemed ripe then for such action, partly because the leading spirits in almost every one of the Sub-Committees were unable to devote time and labour to bring their Reports up-to-date; and partly also because war-time restrictions or shortages had made scarcer than ever before the statistics and other facts, which particular sub-committees would need, to bring their work up-to-date. The war-time needs of Government had attracted several of them to work on Government Bodies, Panels, or Committees. For all these reasons it was deemed undesirable that material of this character—valuable as it must be—should be put out in an incomplete, inchoate, obsolete form, which may reflect unfavourably upon Indian capacity for such tasks.

The last four years of the War were thus a period of suspended animation for the National Planning Committee. Even after the end of the war, it has not been feasible, for obvious reasons, for the Planning Committee to resume its work and finalise decisions. Continuous sessions of that body are indispensable for considering and taking decisions on the Sub-Committee reports presented since 1940, and putting all the material into shape, ready for publication, not to mention making its own Report; but the political situation in the country made it impossible. Other conditions, however, are somewhat more favourable than in 1938-39, when the Central Government of the country were all but openly hostile to such attempts. Lest, however, the momentary difficulties make for needless further delay, it was thought advisable by the Chairman and the undersigned that no more time should be lost in putting this material before the Public. Following this advice, it is now proposed to bring out a complete Series of the National Planning Committee's Sub-Committee Reports, which will

serve as appendices to the Parent Committee's own Report. The Plan of the proposed enterprise is briefly summarised below.

Every Sub-Committee's Report, which is in a final form and on which the National Planning Committee has itself taken resolutions, will be edited and published, with an Introduction assigning their due importance to the suggestions and recommendations contained in that particular report, its proper place in the over-all National Plan; and following it up, wherever necessary, by a kind of Epilogue, summarising the developments that have taken place during the seven years, during which the work of the Planning Committee had been in suspension.

Those Reports, again, which, though in a final form, have not yet been considered, and no resolutions taken thereon, by the Planning Committee, will also be included in the Series in the form in which they were submitted, with such Introduction and Epilogue to each as may be deemed appropriate. And the same treatment will be applied to Reports which are 'Ad Interim', whether or not the Parent Committee has expressed any opinion on the same. They will be finalised, wherever possible, in the office, with such aid as the Chairman or Secretary of the Sub-Committee may be good enough to render. Sub-Committees finally, which have not submitted any Report at all,—they are very few,—will also find their work similarly dealt with. The essence, in fine, of the scheme is that no avoidable delay will now be suffered to keep the National Planning Committee's work from the public.

Both the Introduction and the Epilogue will be supplied by the undersigned, who would naturally be grateful for such help as he may receive from the personnel of each Sub-Committee concerned. The purpose of these additions is, as already stated, to assign its true place to each such work in the over-all Plan; and to bring up the material in each Report to date, wherever possible.

Not every Sub-Committee's Report is sufficiently large to make, more or less, a volume by itself, of uniform size, for this Series. In such cases two or more Reports will be combined, so as to maintain uniformity of size, get-up, and presentation of the material. The various Reports, it may be added, would not be taken in the order of the classification or grouping originally given by the Planning Commit-

tee; nor even of what may be called the intrinsic importance of each subject.

In view of the varying stages at which the several Reports are, for reasons of convenience, it has been thought advisable to take up for printing first those which are final, and on which the Planning Committee has pronounced some resolutions. Printing arrangements have been made with more than one Press, so that two or three Reports may be taken simultaneously and published as soon as possible so that the entire Series may be completed in the course of the year.

Two other Sub-Committees, not included in the list of Sub-Committees given above, were assigned special tasks of (1) preparing the basic ideas of National Planning; and (2) outlining the administrative machinery deemed appropriate for carrying out the Plan. These were unable to function for reasons already explained. The present writer has, however, in his personal capacity, and entirely on his own responsibility, published the "Principles of Planning" which attempt to outline the fundamental aims and ideals of a National Plan. This remains to be considered by the Planning Committee. Similarly, he has also attempted to sketch an administrative machinery and arrangements necessary to give effect to the Plan, when at last it is formulated, and put into execution. Notwithstanding that these two are outside the Scheme outlined in this Preface, they are mentioned to round up the general picture of the arrangements made for publication of the entire work up-to-date of the National Planning Committee and its several Sub-Committees.

The several volumes of Sub-Committee Reports, when published, will be treated as so many appendices to the Report of the parent body, the National Planning Committee. It is impossible to say when that Committee, as a whole, will be able to hold continuous sessions, review and resolve upon Sub-Committee Reports which have not yet been considered, and lay down their basic ideas and governing principles for an all over Plan, applicable to the country, including all the facts of its life, and all items making up the welfare of its people.

The disturbed conditions all over the country, and the Labour unrest that has followed the end of the War has caused unavoidable delays in printing and publishing the

several volumes in the Series, which, it is hoped, will be excused.

In the end, a word of acknowledgment is necessary to put on record the aid received by the Editor in the preparation and publication of this Series. All those who are associated in the task,—members of the Parent Committee, or as Chairmen, Secretaries or Members of the various Sub-Committees,—have laboured wholly, honorarily, and consistently striven to give the best that lay in them for the service of the country. Almost all Provincial Governments and some States,—the latter twice in some cases,—have made contributions towards the expenses of this office, which have been acknowledged and accounted for in the Handbooks of the Planning Committee, published earlier. Suitable appreciation of these will be expressed when the Parent Committee makes its own Report. At almost the end of its task, the expenditure needed to edit, compile, and otherwise prepare for the Press, the several Reports, has been financed by a Loan by Messrs. Tata Sons Ltd., which, even when repaid, will not diminish the value of the timely aid, nor the sense of gratitude felt by the undersigned.

Bombay, 1st July 1947.

K. T. Shah.

Note:—In the Scheme of this Series, originally given, more than one Report was intended to be included in one volume in some cases. The combinations indicated in the circular, of the 20th of June 1947, had had to be modified as the printing of several Reports proceeded.

When about half the volumes were printed, it was found that that scheme would not give a fairly uniform series. The new arrangement is given on the page facing the title page. Some changes have had to be made in that list e.g., the separation of the two Reports on Public Health and National Housing, intended to be in one volume, are now in separate volumes.

Conversely, only the two Reports on Animal Husbandry and Dairying and on Fisheries were intended to be combined. As now decided, the Report on Horticulture is also included in the same Volume.

Again, the original combination of the Report on Mining and Metallurgy with that on Engineering Industries has been modified. The latter now combined with the Report on Industries Connected with Scientific Instruments, which was originally meant to be a separate volume, while the former is to be by itself.

31st January, 1948.

K. T. S.

CONTENTS

	Page
Preface	K. T. Shah 9
Introduction	K. T. Shah 17
REPORT OF THE SUB-COMMITTEE	
I. Introduction	55
II. Line and Radio Communication and Broad- casting Services	60
III. Objectives and how to attain them ..	73
IV. Financial Implications	86
V. Summary of Recommendations ..	89
Appendices I—IV	95
Resolutions of the N. P. C.	121
Summary of Developments	K. T. Shah 126
Maps	141

INTRODUCTION

The Sub-Committee on Communications, Service and Industry, was appointed by the National Planning Committee to deal with:

- (a) the organisation of Communications, including postal service, telegraphs and telephones, as well as radio;
- (b) industries concerned with the manufacture, and connected with providing, of instruments and apparatus needed for telegraphs, telephones and radio, and their parts and accessories;
- (c) encouragement of tourist traffic including hotels, travel agencies and banking facilities.

Norms or Targets

In several cases the National Planning Committee has laid down norms or targets to be attained within the prescribed period of ten years—the first stage of planning,—so as to measure the progress of the Plan in all its several stages, items or aspects. In the case of the Communications Service, however, no such specific norms have been laid down, as in the case, for example, of improvement of necessities of life forming the standard of an irreducible minimum requirements of proteins, carbohydrates, and minerals as well as the necessary protective foods having an aggregate calorific value of 2,400 to 2,800 units for an adult worker; or as in the case of clothing, from an average consumption of 15 square yards to at least 30 square yards per capita. In the case, however, of Social Services or Public Utilities like Communications, the Chairman's Note for the Guidance of the Sub-Committees gives no objective data; but simply mentions: "increasing public utility services." No specific standards are laid down by which to judge the deficiency as at present, and the extent to which that deficiency should be made up within the prescribed period of the Plan. We may, for convenience sake, assume, therefore, our own targets, e.g.,

at least one Post Office in every village, one telephone for every 10,000 persons; one radio receiver for the same number; and the like.

Communications and Cultural Contacts

This is a vital service of great national importance, which recognises, however, no frontiers. Unlike many others, public utility or social services, whose incidence and benefit are confined to a given country and its people; the Communications Service is an international necessary of life whose ramifications go far beyond the boundaries of a single country. Our cultural contact with our neighbours, both east and west, north and south, can only be accomplished by this means. Apart from the movement of pilgrims, tourists, or persons travelling for business or pleasure, for study or employment from country to country, there is no systematic means of regular cultural contacts. But pilgrims are nowadays obsolete; students immature; and tourists too flitting, too few and superficial to serve as effective agents for establishing and maintaining cultural contacts between progressive communities. We must depend upon the public press, books and periodicals as well as individual correspondence in ordinary commerce or scientific curiosity to create and maintain these liens. And these would be powerless to function without an effective Communications Service for domestic as well as international use. The number of those going abroad for study would necessarily be very small and, therefore, cannot be expected to develop contacts to the fullest degree desirable the more so as their own primary business is to study, and not to make contacts. The same, in effect, must be said of emigrants going abroad for employment and even settlement.

Communications and Trade

Under modern conditions the countries of the world are no longer living in exclusive compartments each its own; owing to the demands of trade they are closely and daily connected by the modern means of communications including the news service of the world, so much so that events and occurrences, scientific discoveries, mechanical inventions, and political developments in one country have their repercussions upon others thousands of miles away.

Even if cultural contacts are regarded as of secondary importance in a world dominated by the economic motive, the Communications Service would be of special importance and necessity even for the more material requirements of foreign trade and international relations, which also have a close bearing upon the material development of the several countries. It would be a truism to say that the growth of postal and telegraphic or radio communications is an indispensable adjunct to the growth of foreign trade, and the conduct of foreign relations. We shall consider in another volume the aspect of Foreign Trade and diplomatic relations as dependent upon the development of the Transport services. But the dissemination of information, the knowledge of competitive prices, the data regarding the availability of raw material supplies and of markets, the nature of comparative conditions of production or distribution, can help effectively the needs of international commerce only if an efficient, expeditious and ever-ready Communications Service in all its forms is developed.

By the invention of the electric telegraph, and still more recently of the wireless communications, space as well as time has practically been annihilated. Nevertheless, varying conditions of production of material goods and services, and their distribution in different countries or climates, necessitate an exchange between units possessing a surplus of given commodities or services in one country, which are in deficit in another, which, properly organised and operated, adds to the prosperity of both. This organisation and conduct of international commerce is at present irrational under the influence of the cash nexus; but its reorientation on more scientific lines is indispensable if the world's aggregate economy is to function smoothly, effectively and advantageously for all.

Communications and Domestic Economy

From the point of view of a country's internal economy also, an efficient Communications Service is of the utmost importance. Its extension and expansion are, no doubt, dependent upon the progress of education, including literacy, amongst the masses of the people. But it is itself no mean factor in developing an informed public opinion and civic consciousness fit to govern democratically such a vast unit as this country. One of the outstanding defects of modern democracies is the appalling ignorance, if not illiteracy, of the average citizen, on

matters of moment affecting their own lives. Leaders, therefore, get an importance, which is not only out of all proportion to their real substance; they become hypnotised by their own slogans and clichés to become gradually the breeding ground of their own self-deception. Education, true enlightenment, comes to be at a discount; objective information or scientific data become simply so much brief for special pleaders. The less one knows the more one can talk; the more one talks, the less is one understood; and the less one is understood, the more is one honoured and admired for the verbiage one spins out on any and every occasion, with a pretence to omniscience which is the Trade Mark of democratic leadership. The result is an easy elevation to the pinnacle of eminence and distinction, the only condition for maintaining it is the perpetual figuring in the headlines of the daily and periodical press. As an eminent British politician and Premier of the last century declared: it does not matter what one says, provided one says it sufficiently loudly and always in unison with one's Party.

Communications Service; and Political Progress

In India, it is not only the ignorance of vital problems that dominates the majority of the voters. Illiteracy also has its contribution, inasmuch as four out of every five men, and perhaps 49 out of every 50 women, are abjectly illiterate in regard even to the most elementary knowledge of their own mother tongue. If the new-found independence of this country is to be sedulously preserved and developed on democratic lines,—and the National Planning Committee has from its very start promised a democratic constitution for a free and independent India,—it is of the utmost consequence that not only should literacy be developed as intensively and rapidly as possible throughout the country, but the general level of information on vital matters of public importance be raised through the medium of literacy among the citizens in a degree still more extensive. For this purpose effective and extensive growth of the Communications Service, in all its various forms or branches, must be taken as an integral item of the National Plan, and given as high a priority as could possibly be managed.

Communications & Economic Development

The same may also be said, only with much greater emphasis, about the importance of this service in connec-

tion with the economic development of the country. The spread of information, with regard to the available raw materials, technical aids, scientific discoveries, tools and machinery, transport, banking and other facilities, labour and market conditions governing the principal items of production and commerce, are indispensable, if all the effort which National Planning implies for the development of the economic resources of the country are not to be wasted, or the benefit of such development is not to be monopolised by a microscopic class. For this purpose, moreover, it would not be enough to consider the Communications Service as an agency for conveying the individual's correspondence with his friends, relatives, or business associates. The State must develop on its own hook all modern means of communication and information throughout the country, as integral part of the National Plan, not only to arouse the people to their country's potentialities, but also to enable them to join consciously in the concerted mass effort to raise their own standard of living, and improve their outlook on life.

Different Forms of Communications

The Communications Service proper has, as the terms of reference given above indicate, been divided into four main sections, viz., the Postal Service proper, the Telegraph, the Telephone, and the Radio, including Wireless Communications and Broadcasting in general.

Postal Service

The origin of the Postal Service in its present form in this country must be sought in the feudal prerogatives of the Kings of England which made the highway of the country a royal monopoly. Traffic thereon was accordingly liable to pay tolls. It was utilised by Charles II to establish the first postal service, which has ever since and everywhere been treated as a public monopoly. We need not go into the details of the historic development of the postal service in India under British domination. Suffice it to say that the British Government in this country, for its own convenience in holding and ruling this great country, organised a regular postal service about the middle of the last century. The modest beginnings of those days in carrying letters and postcards, mainly official, have now expanded into a volume and variety of service

by the post office, which is but very poorly reflected in the financial side of the picture that seems to attract an undue attention from the public. What is much more relevant to the present consideration is that these services cannot only be multiplied, expanded and developed, so as to be of ever increasing utility to the people in their material as well as cultural requirements; even without any further expansion or increase in their variety, the existing services themselves can and should be developed, if the National Plan itself is to be really effective and really beneficial in the economic development and cultural growth of this country. This does not mean that the National Plan can dispense with their number being increased. It only means that if financial excuses or technical reasons are alleged to block the way for increase in variety, those factors must not be suffered to bar the improvement in the existing services.

Postal Tariff—Its Nature and Incidence

The postal service proper consists of carriage of letters and postcards, for a prepaid charge which varies according to the weight of the article, but is uniform irrespective of distance throughout the country. In the days before World War I. the Postal Service in India was claimed to be the cheapest in the world, with its one-quarter anna postcard, and half anna letter of one tola in weight. World War I and its aftermath abolished these rates, and substituted double and even threefold the pre-World War I charges. The frequent increases in the postal tariffs is an unmistakable index of its origin, a public monopoly of profit to the King,—or revenue for the Exchequer,—rather than a service to the community. But that is a mistaken view of the postal facilities, as will be shown a little more fully below. For the moment it is important to point out that, in proportion to the population, area and the inland trade of the country, the existing postal service, however considerable it may be as compared to its earliest beginnings, compares very unfavourably with the dimensions of similar services in other countries. At the present time, for instance, the Post Office carries (1944-5), some 1,750 million articles, which work out at a little more than five such articles per head per annum. If we remember that the 15% of our total population which lives in towns has far more occasion to use this service than the 85% villagers, the average use of this service by the latter would seem to be hardly once

a year. The relative smallness of the use of the postal service made by the people is due, no doubt, in great measure, to the immense illiteracy amongst the people, and their living for the greater part in a system or ideal of local self-sufficiency and village autonomy that has not yet been broken down by the advent of modern means of communications and modern demands of trade. But this only explains; it does not justify the continuance of this state of things any longer.

Target For Planned Expansion

There were, according to the latest available figures, only about 25,860 Post and Telegraph offices throughout the country, and 159,000 miles of main lines, with 126,000 permanent, and 26,000 odd temporary, personnel. It means that we have hardly one post office for every 125,000 persons, or one for every 3,000 towns and villages; or one for every 50 sq. miles of territory. This is very, very limited service, and must be expanded at the first opportunity. The number of Post Offices will have to be multiplied 20 times if every village of 500 inhabitants and more in the Dominion of India is to have a post office doing the most elementary postal business; and the staff working there would have to be increased at least ten times the present personnel. This would mean that the bulk of the village post-masters will be parttime workers, as also sorters, collectors and deliverers. It will also mean that every available mechanical aid is utilised to economise the worker's labour and yet provide the promptest service. The Post Office has not so far boasted of any grandiose post-war plan. But whether or not it has any such plan, the target suggested above must be accepted as their irreducible minimum to be provided in the first stage of the National Plan so that every adult citizen at least should receive and send out one letter a day.

Commercial Criterion—Not Applicable to Public Utility

The old ideal of starting a new post office only when it can be shown to yield a surplus, or at least be self-sufficient, is based on a complete misconception of the place of the postal service in the national economy of a progressively industrialising country like India. This service provides the only bond between the villager and the outside world. As such it would be fatal for our national

economy if 19/20ths of the villages of India are as today left without even a post office each its own. A Post Office is a public utility service, which is not, and should not be expected to be, a commercial concern seeking monetary profit for its proprietors. The fact that from its very start, it was an absolute monopoly charging rates which had more than a taint of taxation, has led to a distortion of the view regarding the utility and place of this great Public Utility in the national economy. The post office has in the past been regarded as a source of revenue to the State, as every time more money was needed for a war the postal rates were stepped up to provide its quota from that source. The service thus becomes restricted, and income is derived by limiting the supply, so to say, with the result that the monopoly operates in all the fullness of a private commercial enterprise.

The utility of the Post Office, one cannot repeat too often, or too emphatically, is not to be measured by the money return. There is, indeed, no reason to doubt its ability, properly developed, to be at least self-sufficient if not a source of direct revenue to the monopolising State, without counting in cash the manifold service it can render to the community through its fullest possible development. At the present time the postal revenue, according to the latest Budget, is estimated at Rs. 10.8 crores from the sale of stamps only and message rates for telegrams. If the aggregate of telegraph, telephone and postal stamps is taken into account, the total goes to Rs. 15.9 crores for the Dominion of India (from 15th August, 1947, to 31st March, 1948). Averaging this for the entire financial year, it may probably amount to somewhere near Rs. 25 crores for India, which means nearly a charge of Re. 1 per head of population, paid, of course, by those who use the service. But in proportion as they restrict the use owing to the high charge, the aggregate economy of the country must suffer.

Postal Charges and Salt Duty

If one compares this to another essential of life, namely salt, which used to yield about Rs. 9 crores gross revenue from a population of 40 crores, and consequently resulted in an incidence of taxation equal to As. 4 per head per annum, the postal revenue is more than double that derived from salt. The necessity of salt as an article of diet may not appear to be comparable to the need for postal service involving expenditure of the poorest man.

Nevertheless, if one bears in mind the utility of this service in developing village contacts and the cultural growth of the people; if one recalls its value in promoting trade and commerce within as well as outside; if one thinks of its contribution in ironing out the unequal development of the various regions as well as various sections of the population, so as to bring about more even development of the available resources of the whole country and at the same time ensure a measure of justice in the distribution of the resultant wealth for all sections of the people, the significance of the tax burden on this service cannot be overestimated.

Directions for New Development

There are many directions in which this service can be developed.

(a) The limitation of weight on letters, packets and parcels, for instance, and the adjusting of the postal charge in accordance with the weight, leave much room for improvement. Such limits are anachronistic in these days of State-owned railways carrying the mails whatever their necessity in days when they were carried by human runners, and on pack animals. This will be considered more fully below and illustrations added to reinforce the argument.

(b) The lowest priced communication, a postcard, or a one-tola letter, is another source of justifiable criticism, not only because in the past these charges used to be half or $1/3$ the corresponding charges of today, (As. $1-1/2$ a letter and half anna—until July, 1946, $3/4$ anna—a postcard); but also because of the failure to realise by the postal (or financial) authorities concerned that a reduction in such charges would not necessarily mean a decline in revenue, automatically and proportionately. There is, in fact, good ground to believe that, if the price of the postal service is reduced, its volume will be increased in geometric progression. The result would be that the revenue, instead of falling, will very probably show a substantial increase. The so-called Law of Increasing Returns operates in such matters far more directly than the Indian authorities seem to be aware. The increase in traffic expected from a reduction in rates would, no doubt, be due in part at least to the spread of literacy, amongst the masses by the programme of compulsory

education. But it would also be due in part to developing economy, and consequently the growing need for communications.

These two directions, therefore, namely, expansion of the weight and reduction of price per unit charged, promise handsome developments which may justify, even from the narrowest financial standpoint, the adoption of these reforms.

(c) **Registration.** Registration of letters packets or parcels is an additional facility, in the shape of assurance of delivery to the addressee, for which a disproportionately high charge is made today. The only justification for the increase of Registration Fee from As. 2 to As. 3 is: revenue reasons. There, too, the facility would be availed of much more fully if the old fee was restored. There is, besides, an additional acknowledgment fee of 1 anna.

(d) A minor facility of the same character is the so-called Certificate of Posting, which also ensures delivery at the other end, though not with the same certainty, and the implied condition of indemnification in case of non-delivery that a Registered letter offers. While for ordinary communications the need of such an additional assurance may not be necessary, for important business or official communications, involving large sums or high contracts, Registration is a necessity that a mere Certificate of Posting does not offer. The Registration fee may, accordingly, well be lowered from its present rate enhanced in war-time. That particular exigency of the Central Government has now passed away, and so, if the enhancement is continued in normal times, it would be founded on a clear misconception of the nature and purpose of the Communications Service; and the sooner it is corrected the better.

(e) **Insuring Postal Communications.** Essentially of the same character as Registration is the Insurance facility for articles sent through the Post Office. It provides not only assurance of safe delivery, but also a contractual obligation of the Post Office to indemnify the party concerned in the event of non-delivery of such insured articles. The charge, however, for this special service is graded according to the value insured; but bears no relation to the actuarial calculation in fixing the rate. The insurance fee, according to the latest tariff, is As. 4 for the first Rs. 100/- of the value insured, rising to

As. 5-1|2 for articles of the value not exceeding Rs. 200|-, As. 8 for Rs. 200 to Rs. 300, for every additional Rs. 100 or fraction thereof over Rs. 300, and upto Rs. 1,000 As. 2, and thereafter As. 1 for every additional one hundred or fraction thereof. There is a maximum value fixed upto which only insurance can be effected by the Post Office.

If these rates are compared with the corresponding insurance premia charged by private Insurance Companies working on a commercial basis, insuring goods against loss, pilferage, damage by fire, and the like, the postal rate levied by a public utility monopoly appears disproportionately high. The underlying idea appears to be not to make the service as widely acceptable and used as possible; but to restrict it only to a particular class. Hence the postal insurance service is availed of by a relatively small class. But strangely enough, that class is relatively poor, and the articles insured are of comparatively smaller value in unit parcels. Against the 1,750 million articles posted in 1944-5 those registered numbered only about 50.1 million; or something like 1 in every 35; while only about 3.1 million articles were insured, i.e., one in 16 of the registered articles. Even so they were valued at Rs. 147 crores, which brought in nearly half a crore of revenue to the Post Office.

(f) **Value Payable Parcel.** The value payable parcel post is another variety of the same service, of great benefit to smaller tradesmen and the more important peasants. It is the same as the Cash-On-Delivery service in Britain. Delivery being at the door of the consumer with all charges inclusive, it saves a world of worry and waste of time that this class can ill-afford. In 1944-45, the total value of such V. P. Parcels carried by the Post Office was 24.7 crores, a very small fraction, probably, of the total purchases of this class. Its expansion in other fields will be considered later.

(g) **Money Orders: Postal and Telegraphic.** A cognate form of the same facility is provided by the Post Office in the shape of inland remittance of money. The charge for an ordinary Money Order, sent through the post is As. 2|- for every ten rupees, or 1-1|4%. It used to be, before the war time increase in postal rates, As. 4|- for every Rs. 25|- or part thereof; being 1% for Rs. 100. As would be evident to the meanest intelligence outside the charmed circle of postal and financial officialdom, this service is mainly availed of by small remitters,—migrated

workmen, urban artisan, for their village dependants, and rural parents of students in towns. The charge is a form of progressive taxation, the progression being in the inverse order. That is to say, the lower the ability of the payer, the higher the charge. This would be clear beyond doubt, if one compares the inland remittance rates of commercial Banks for large sums, i.e., one-eighth of one per cent. or one-tenth the charge levied by the Post Office on the poorer remitter. It has been generally accepted as an unfailing index of the advanced industrial and commercial society that the cost of inland remittance be wholly abolished. The Cheque system has practically achieved this desideratum in all countries where the banking system has developed fully, and payment by cheques is the universal practice. In India, however, the cheque system is yet in its infancy; and inland remittance is still ten times as costly when effected through the public Post Office, by relatively small remitters, of comparatively small amounts. In any case, there is a maximum remittable by Money Order.

The Telegraphic Money Order is a variant of the service, even more costly than the Postal Money Order. The basic fee is, no doubt, the same as in the case of the postal money order. But there is an additional telegraphic charge, calculated at rates for inland telegrams for actual number of words used in the telegram advising remittance, and a supplementary charge of two annas on each telegraphic money order. Needless to say the charge for the Express Telegram is double that of the ordinary rate. Here, also, inasmuch as the small remitter cannot command the service of a Code, the charge is disproportionately high, varying inversely with the ability of the sender. In 1944-5, the total Money Orders numbered 6.41 crores, and aggregated Rs. 173 crores in value.

There is a Foreign Postal Order Service, also, to which the same criticism applies,—as it does to all other forms of postal facilities for foreign intercourse. In all these services,—V.P.P., Money Order, Insured Parcels Post,—there are needless restrictions and obstacles which, the Indian Postal authorities do not seem to have yet realised, need to be removed if their service is to give the fullest value, and play its due role in the development of our national economy.

(h) **Parcels Service.** Apart from the V.P.P. there is an ordinary Parcels and Book-Posts service. The charge

for parcels on which a maximum limit of 12-1/2 seers, equal to 25 lbs. or 1,000 tolas has been placed for a single parcel, is a minimum charge on the first 40 tolas of As. 6, and for every additional 40 tolas or part thereof, another As. 6. Registration of parcels is compulsory if the weight exceeds 440 tolas or 11 lbs. There are additional restrictions of cubic space occupied on Foreign Parcels for which the rate of fees levied is higher.

The limit on weight of 12-1/2 seers or 1,000 tolas was intelligible in the days when parcels had to be carried by runners or on animal-drawn vehicles. In these days, however, when the bulk of the postal carriage is done by railway, steamer, automobile or airplane, wherein considerations of the weight carried are unimportant (except as in the airplane), such limits seem to be utterly unreasonable particularly in view of the fact that the bulk of the railways are owned and managed by the State. When Railways were privately owned and competing carriers, there might have appeared some justification for such regulations in the eyes of those who regarded individual enterprise and private profit from public utility as sacrosanct. But nowadays, with public ownership and management of railways, and universally accepted State Control on all means of transportation, these limits inevitably prove needlessly vexatious. If this service is really to be made popular and freely used extra facilities may well be provided on railways, for parcels particularly of perishable articles of food like fruits in season. Not only should the limits of unit weight be raised to something like one maund, or 82 lbs., at least, and the charges be not more than 50% above railway luggage rates within prescribed zones, but still further facilities in the shape of specially designed cars with cold storage accommodation will very much increase the parcels traffic and consequently the revenue derived from it. At the same time the service to the public would be more than proportionate. On the other hand, the outlay of capital equipment and current maintenance on such special conveyances would be a small fraction of the return obtained by the Post Office from this extra facility. If necessary, this relaxation of weight-limit may, to start with, be confined only to such routes, or between such points, as permit of railway or water carriage, where bulk and weight would not matter so very much.

Private Enterprise in Public Utility. As already mentioned, parcels sent by post can also be insured, but the

postal insurance rate is disproportionately high, compared to the private insurance corporations doing the same business. All these rates had been framed originally under the influence of the doctrine that State intervention in economic matters, or state enterprise in commercial service, should be the minimum possible. The result was that the greatest possible section of the field for such business was deliberately left for private competitive enterprise to make profit for itself from an indispensable public service. This ideology, however, has long since become obsolete. Its tradition, nevertheless, continues in this country, and so the postal service charges continue to labour under the old handicap; and, therefore, neither the service to the public is commensurate with the importance of that service in modern economic life, nor are the charges levied justifiable in proportion to the service rendered.

This characteristic is evident also in the Money Order Service, where, too, the private banks are left with the largest slice of the business; and for the same reasons. Notwithstanding this desire to leave as great a section of the field as possible free for competing private enterprise, Postal Charges in India for all varieties of its service seems to have been framed as for a commercial enterprise. The principle adopted by the railways in making its rates, namely, charging what the traffic can bear, seems working here as well. No doubt the flat postal rates irrespective of distance are not in harmony with the commercial principle of railway rate-making. We will have something to say elsewhere as regards that basis even in connection with the railways, assuming they are to be operated as a great public utility service. So far as the Postal Service is concerned, whether inland or foreign, and for letters, parcels, insurance, or remittance, the principle of rate-making should rather be to charge only such fees as would render the greatest possible service to the largest number and not yield the best return to the Treasury. The Postal Service, being a public monopoly, if properly operated, can easily adopt this principle; and yet make a surplus for itself on the most rigid system of commercial accounting in that department. Unfortunately, however, the tradition hitherto has been to regard this monopoly as a means to squeeze out the utmost revenue, so that in every emergency, such as that of a war or depression, the Post Office and the Railways have been resorted to by an increase in rates and fares irrespective of any economic considerations of service rendered,

value received or taxable capacity of the public affected, in regard to each of these. The Todhunter Committee examining the Tax System of India some 25 years ago has acknowledged the presence of this undesirable element in the Indian Postal or Railway rates; and recent events have more than confirmed this view. If the postal service is to occupy its proper place in a comprehensive National Plan, the rates and charges now being levied would have to be radically revised and generally reduced; the limitations and restrictions now prevailing would have to be relaxed and rendering service made the determining consideration, and not deriving a profit or surplus revenue for the State.

(i) **Postal Savings Bank.** Two other items of postal service, which are in considerable demand by the general public, may also be noted in this connection:

- (1) The Postal Savings Bank; and
- (2) The Postal Life Insurance.

The Postal Savings Bank system has many regulations which operate more as a deterrant than as encouragement for utilising that service by the ordinary public. There is a low, rigid limit beyond which deposits cannot be held in one account in the Post Office Savings Bank; the interest rate is comparatively low; and facilities for withdrawal are hampered at every step. There is, moreover, no means of obtaining a loan or advance on the Post Office Savings Bank deposits so that the utilisation of the facility by the small trader, artisan or businessman is all but impossible,—except only for conserving savings. No matter what the security offered by this system, its security is needlessly restricted; The governing factor, once again, seems to be to leave as large a part of the banking service free to private enterprise as possible.

With the introduction, however, of a truly national banking system beginning with the Reserve Bank of India, these obsolete ideas of conducting the Postal Savings Bank in a watertight compartment of its own, must be abandoned. This must be the more so as the fixed as well as working capital requirements of the National Plan demand the utmost conservation and utilising of every available rupee, which is readily mobilised in the shape of bank deposits. The reaction of these deposits upon the general credit and currency structure of the country need not be discussed in this place. But that they may have an important place in that system cannot be denied.

Connected with the Post Office Savings Bank and the procedure for making as well as withdrawing deposits, the Giro system of payment, or the Postal Cheque, i.e., bank transfers by book entries without any passage of actual money, whether paper or coin, remains almost unknown to the Indian Postal authorities. Few of them seem to have heard even the name of this device. Even bankers and businessmen,—let alone officials,—seem to be still unaware of this effective device for economising currency, as well as facilitating inland remittances of the smallest sum, practically free of charge, without affecting the national currency, or injuring the country's credit system. The essence of the device lies in effecting transfers of money from one account to another, either in the same town or in different centres in the country, without making any charge for the service. All small and recurring periodical payments, e.g., subscriptions for newspapers and magazines, Union dues, Insurance premia, and even payment for small purchases can be made by this system, provided one has an account with a Post Office Bank. In a country like India, with millions of peasants in direct contact with the State through the Land Revenue system, the possibility of introducing such banking facilities to the mass of the people ought to be very considerable. Even the prevailing illiteracy ought to be no bar to the use of such devices. For instance, if Transfer forms are coloured differently for different amounts, and also for different Banks within the same town or at a distance, illiteracy of the account-holder and transferor or transferee would be of very little significance, since the thumb-mark can serve much better than signature by the ordinary depositor, to ensure identity and safety in these transfers. The execution of a really comprehensive and intensive National Plan would certainly demand more expeditious and effective methods or devices for capital transfers to meet the needs of long term investment or current account and this cannot be achieved by anybody else better than by the State.

The total number of depositors, on 31st March, 1945, was 30,95,000, and their total credit balance was Rs. 80.2 crores. These could be easily multiplied four or five times if the restrictions noted above were relaxed. During the war, considerable expansion of this system took place by providing liberal facilities for conversion of Savings Bank Deposits into National Savings Certificates and other such forms of relatively short-dated and easily

encashable public debt which represent the national saving.

(j) **Postal Life Insurance.** This is not directly connected with the ordinary business of the post office. Nevertheless it is eminently serviceable, and adds to the utility of the aggregate Postal Service. There is only one criticism to offer, viz., this needs to be much more extended, expanded and multiplied than is the case today. During the First World War, the Fabian Society published under the inspiration of Sydney and Beatrice Webb a handbook of suggestions which consisted almost entirely of ways and means to develop and increase the postal services, so as to meet a great portion of the War Costs, rendering at the same time services to the community which the latter may think well worth paying for. Some of these forms are noticed a little more fully below. Here it is enough to add that in this and similar directions, the postal Service can be expanded in India also so much as to yield substantial revenue to the State and yet render ever increasing service to the people.

The postal system of life insurance is confined to Government employees. If it is extended to the public for even small policies, the competitive private insurance companies may no doubt suffer; but great benefit would accrue to a much larger section of the public who would otherwise be unable to obtain this service for their own security. For no security can be better, no solvency more dependable than that of the Post Office. Even if there is a maximum limit put on the life value that can be insured through the Post Office, say Rs. 5,000, a very considerable business can be developed, without undue interference with private enterprise in this field. This is, of course, on the assumption that such enterprise will continue, notwithstanding the introduction of planned economy, even though Insurance must be treated as Public Utility Service. Such insurance may be for a whole life, or for a fixed period with participation in the profits,—the so-called endowment policy; or it may be in the form of annuities paid to the insured after a certain period against contributions made earlier. This would be effective provision for the policy-holder's old age. Until the State adopts a system of universal old-age pension, not confined only to the industrial workers, some such means of guarding against a normal contingency, the need of which cannot be over-emphasized, must be provided; the more so as it would be obtained by the pensioner's own contribution, and represent his own saving.

The State can quote much lower rates because it would have to pay no middleman's commission. And it can offer any day far greater security than any private corporation; as the entire national wealth backs this obligation. A good working model for such a scheme is provided by the latest legislative proposal for workmen's Health Insurance for which a special Corporation is established and a definite Fund is created out of which the benefits will be provided.

As regards the ordinary pensions payable by the State to its retired public servants, the system can be extended to wherever the pensioner avails himself of the postal banking system. In proportion as the service of the State, through its various public enterprises, as well as the ordinary administrative and defence organisations, increases, the number of those coming in this category, and the volume of business coming to the State will also grow. Here in fact is a direction in which the Post Office can increase its utility to the great advantage of the Exchequer, as well as to the lasting benefit of the community as a whole. At the present time the total number of Post Office Insurance policy-holders are 92,980, according to the latest statistics, with an aggregate insurance of Rs. 18.8 crores. This works out the average life value insured at less than Rs. 2,000|-.

The large sums that the private Insurance Companies spend nowadays by way of commissions for agents and intermediaries would automatically be saved to the State or to the insured if the post office undertakes this business. The collection of premia and disbursement of benefits would also be less expensive if conducted by a public organisation like this. And if the Postal Banking system is linked up with this business, further economies can be easily effected, making the service cheaper to the consumer, and yet productive to the State. Furthermore, the amounts now required by law to be invested in public securities by the Insurance Companies would also automatically come to be invested by the Post Office in the same kind of securities, and so bring an added degree of security and assurance to the insuring public at the same time providing new sources of capital for investment in public utility projects like hydro-electric power generation and its distribution.

In regard to foreign trade, too, if this principle is extended by Insurance being made a public utility ser-

vice and State monopoly, the advantage to the trader will be incalculable. There can likewise be no question raised about the security of any bill, delivery order, or warehouse certificate, which is backed by an insurance policy made out or endorsed by the State.

Yet another extension of the system is found in the National Health Insurance arrangement. The adoption recently of such a scheme for industrial workers is a beginning, which may well be extended to other classes, and provide Crops and Cattle Insurance also, if social security is to be provided for every worker and every peasant in the community. In fact if such a comprehensive programme of National Insurance is adopted, the present emphasis on life insurance as a provision for those left behind would become utterly out of date, since all the normal contingencies and demands upon an ordinary citizen's saving capacity to face the common contingencies of life would be assured and guaranteed in a universal system of national security, so that no one need make any separate, individual provision for his own dependants. The State would provide for their education, health and employment, and the individual himself would be provided for in his old age as well as illness, accident and disability. Where then is the need to make separate provision for one's death?

(k) **Post Office—Quinine Vendor.** One of the most important miscellaneous services performed by the Indian Post Office is the sale to the public of Quinine, a specific against malaria, the commonest epidemic in the Indian countryside. This has proved a boon; its utility increases as the knowledge of such specifics spreads. The service can be extended to other specifics, like aspirin, purgative salts, supply of vaccine or sera for inoculation, and to vaccination, if the Post Office provides these and allied facilities in collaboration with the Public Health Service. The danger of using patent medicines put upon the market by private manufacturers cannot be exaggerated. The only safeguard against it is the State taking over the supply of guaranteed wholesome and specific drugs at cost price or a little more, thereby guaranteeing effectively against quack medicines and against exploitation of the gullible, ignorant, suffering public by the private producer.

Other Improvements in the Postal Service

Suggestions have been put forward in every section of this Introduction to improve and expand each item of the Postal Service, so as to make it more popular as well as more productive. We may sum them up here under two or three heads:—

(a) There is a regrettable absence of mechanisation, which would not only economise the use of human labour, but also make the service much more regular and efficient. There may be a few large establishments with their own franking machines, obviating the wastage involved in affixing the precise number of stamps to each article to be posted. We have hardly any public automatic stamp-vending machines; and still less any mechanical system of sorting, collecting, or delivering articles posted.

(b) Very little attention is devoted to the convenience or comfort of the postal worker in the shape of providing mechanical aids to ease his toil, like bicycles in rural areas, or wheeled delivery boxes worked as a cycle. The delivery staff, in large towns, where houses are veritable rabbit warrens, and involve considerable mounting of stairs, get very little help from lifts which would save their time and strength very materially. If only due attention were paid to it, arrangements could easily be made to save nine-tenths of the trouble the postman feels in delivering letters and parcels in large cities like Bombay or Calcutta where tall houses accommodate a number of families.

(c) Relaxation of the present restrictions on a maximum weight of parcel post; remodelling of the rules governing insurance of postal articles; reform in the regulations affecting the Savings Banks Deposits, Money Orders and Value Payable Parcel; designing and providing special facilities for the carriage, as postal parcels, of perishable goods, e.g., a special milk and fruit car with cold storage equipment, and others of a like nature, if effected, would make the Post Office a mighty engine of service to the community and revenue to the State.

TELEGRAPHS

The Telegraph service in India is relatively of later origin than the Post Office. Like the Post Office it has been from the start a monopoly of the State for several reasons. Up to 1883, it was strictly a separate department. Arrangements, however, were made in that year to make certain Post Offices also serve as Telegraph

Offices for greater public convenience. But even then, the accounts and administration of the two services were kept apart.

A closer union was made 25 years later when the accounts of both the branches of the Communications Service began to be shown as one item in the country's budget (1907-08). Three years later another reorganisation took place when the circles of the two offices were combined and made co-terminus. From the beginning of 1912-13, the Director-General of the Post Office was also made the Director-General of Telegraphs, whose evolution has been completed now by the administrative head of the entire Service of Communications being styled Director-General of Posts and Telegraphs. He functions under the Ministry of Communications which is made into a separate Ministry with the beginning of the Interim Government formed in accordance with the basic lines of federal structure for India as proposed by the British Cabinet Delegation. Under that scheme the Central Government was entrusted only with the specified functions of Foreign Affairs, Defence, and Communications, and the Finance necessary for the same.

The work of the Telegraph Service is a little more technical than that of the Postal Service. There are, accordingly, two sides, that of Traffic, or commercial, and Technical, or engineering. In the superior direction however, both these sides are amalgamated, just as the Telegraph as well as the Postal Services are combined under one Director-General.

The Telegraph Service is also more costly to start, as considerable capital outlay has to be incurred for constructing the telegraph lines, and providing the necessary equipment to work them. The commercial side of the Telegraph Service has consequently shown, almost from the start, a recurring deficit, which would have been much greater than it has been shown in the accounts, had those accounts been kept on a strictly commercial basis, making adequate provision for interest, depreciation, reserve and the like.

Charges and Varieties

The Telegraph charges have had a much more varied history than the postal rates. The Postal rates before 1915, could be claimed, with some justice, to be the cheapest in the world. Not so the Telegraph charges. They have differed not only according as the telegram

was for inland service or for foreign country; but also according as it was Deferred (As. 4 for 8 words), Ordinary (As. 8 for the same), and Urgent (Re. 1 for 8 words). These different classes have, however, since been replaced, for inland telegrams, by the Ordinary and the Express, the rate of the latter being double that of the former. A minimum basic charge for eight words of As. 13 for an Ordinary Telegram and Rs. 1-10-0 for the same number of words Express is fixed, each additional word costing 2 annas in the latter and one anna in the former. Part of this charge is a war-time tax which still continues two years after the war. This is another indication that these charges are in a very considerable proportion tax revenues rather than payment for service rendered. For, like the Postal Service, the Telegraph Service is also a monopoly of the State, which exercises the monopolist's privilege to charge the utmost he can to derive the greatest profit for himself, and not to render the greatest service to the public. The combined service has in recent years shown some surplus of revenue over expenditure that has on account of the wartime requirements been carried to the ordinary revenues. With the recent increases in the emoluments of the employees, there is little prospect of such surplus continuing much longer. Apart from the wartime exigency, the principle was formerly accepted that every surplus of revenue over expenditure for the maintenance of the Service, including interest and depreciation charges, should be re-invested in the Service so as to improve or extend the same. Unless this salutary practice is fully restored and acted upon more and more progressively, there is no likelihood of the Service yielding a surplus to the Exchequer or the highest advantage to the user.

The variety in the telegraph service is found not only in the two classes of telegrams mentioned above, but also in the facility for Telegraphic Money Orders, for the use of codes, economising words, for special rates in multiple copies of the same telegram to several addresses in the same telegraph office, and for greetings or social occasions Telegrams and the like. Greetings Telegrams were suspended during the war for financial reasons, and have not been yet restored. In view, however, of the popularity those telegrams had enjoyed, it is not too much to hope that they will be restored at an early date.

In Foreign Telegrams also, besides the Ordinary and Express wires, whose rates per word varied according to the country of destination and distances, there were for

British Commonwealth and English speaking countries the Week-end Letter Telegram (WLT), Daily Letter Telegram (DLT), Greetings and Social Occasions Telegrams, the Night Letter Telegram, and the like. The rates for these are very economical. Code Telegrams are also permitted to certain foreign countries.

Finally, the concession rates allowed to Press Telegrams is a facility for improving and extending the news and information service, which is a most important item in the growth of commerce, and the development of the public economy within the country. It also helps in the smooth conduct of international relations and to promote co-operation in the peoples of the world.

Defects in the Service

Both Postal and Telegraphic rates have been regarded, and not unfairly, as so much tax on general information and public education, so indispensable to the efficient working of a democracy. In England, certainly, great constitutional struggles have centred round the so-called stamp duties, which it was considered the mark of liberal statesmanship to reduce from time to time, till it was eliminated. If a charge on the service in any form is unavoidable, it must be as low as possible.

The Telegram enjoys a superiority over the ordinary postal communication by letter or post-card in that it is normally much more quick in delivery particularly when the service is efficient. The introduction of the Air Mail service, and its progressive expansion has made that advantage relatively of small effect, particularly in a country where delays in delivery are far more common than is generally believed. The Telegraph service has, after the War, been found to be particularly inefficient. Delays are long and frequent. Misdeliveries and faulty transcription are not uncommon. That is due, according to the official apologists, to the overworking of the machinery and equipment, and its consequent obsolescence at a much more rapid rate than was the case before the War. This explanation, however, even if true, is not incapable of immediate remedy, if the Telegraph Service is to be maintained as an integral part of the Communication Services and expanded and improved accordingly.

The fact, however, that India has not yet developed the basic industries to supply her own machinery and equipment for this service is much more relevant; as also the consideration that a fair proportion of the recent

expansion in personnel is new, untrained and unfamiliar with the work. But both these are also capable of an early and effective remedy.

Of late, moreover, it has become customary to allege labour unrest to be responsible for the comparative inefficiency. Labour is charged with ca'canny tactics, shirking work or doing as little as possible with a view to earn overtime or special pay. But this, even if true, would scarcely explain all the deficiencies that have recently been noticed in the working of this service. And even granting, for the sake of argument, that labour has become inefficient, or is deliberately trying to limit output; and at the same time making demands for increased wages, which makes the service inevitably costly, the remedy for that is to be found in a more extensive adoption of the mechanical devices for saving human labour wherever possible, and so restoring efficiency that is at present conspicuous by its absence in the administration and working of this department. Competition from the Railway Telegraph Service may also be held responsible for a part of the actual unfavourable financial position of the Telegraph Service.

The only mechanical device which has been recently introduced in this Service is the teleprinter, which expedites the recording of the message over long distances wherever such equipment is available. But that equipment is confined to a few centers only. It will not suffice for remedying all the deficiencies due to delay, misrecording, misdelivery and other such handicaps or faults in the Telegraph Service, which have been brought to light more and more in the years after the War.

The foreign service of the Indian Telegraph system is worked in conjunction with the Cables and Wireless Corporation; though, on the Indian side, it is a public monopoly. Charges differ according to distance, or the place of the country of destination within the British Commonwealth or outside. They are framed obviously with a view, not so much to offer a welcome facility in communication, as to derive an income for the State from this service which is still considered to be something of a luxury. It need hardly be added that the Telegraph Service nevertheless continues to be a losing concern.

The volume of Telegraph traffic has, no doubt, grown in recent years. At the end of 1897-98 there were some 50,000 miles of lines and 150,000 miles of wire and cable. In 1944-45 there were 113,400 miles of line including

cable, and 1,194,400 miles of wire including conductors. The number of paid inland telegrams has increased from 4.1 million private telegrams in 1897-98 to 19.775 million in 1944-45. The proportionate increase in the State telegrams is much greater and still more so in regard to press telegrams which grew roughly from 56,000 fifty years ago to about half a million messages at the present time.

The foreign telegraph traffic has likewise grown in the last 50 years from somewhere near three-quarters of a million in 1897-98 to over three million. State telegrams during this period increased in a somewhat lower ratio, while press telegrams have grown at a much higher rate, rising from 5,278 in 1897-98 to 83,668 in 1944-45. Telegraph workshop outturn has also increased, being valued at Rs. 242.48 lakhs in 1944-45.

The Telegraph Service, it must be admitted, is more expensive to the authority, not only because of the greater use of stationery, but also of the higher capital cost and greater costliness of the personnel required for operating this rather technical service. But making all allowances for its comparative expensiveness, the Service still remains defective, and admits of improvement as well as economy by the introduction of mechanical devices now in vogue in most advanced countries of the West.

The variety of service offered may also be improved in such form as, for example, greater facility for replies being promptly brought to the Telegraph Office. But that facility is nowadays confined only to the prepaid message. There is, however, no obligation on the part of the delivering agent to wait for the reply even on reply paid telegrams. The introduction, again, of such devices as the Night Letter Telegram in vogue in many foreign countries, Greetings Telegrams, Daily Letter Telegrams, special business telegrams apart from the code, Social Telegrams, and the like, may provide good business during out-of-office hours, when the pressure on the machine is less heavy. It would keep the staff as well as equipment more fully occupied, at less cost than is the case today with a greater variety of service to the public.

As already remarked the Telegraph charges savour as much of a monopoly price as the Postal rates. There is an element of taxation, explained only because of there being a monopoly, even though subsidised. Reduction in rates and charges would thus be an elementary demand, not only if the service is to be made more

popular, but also if the entire system of communications is made to discharge its full function in the aggregate economy of the country. Radio telegrams have no doubt been playing of late an important part.

Size of Business

The number of radio messages by departmental wireless in 1944-45 was nearly 342,000 or an increase of 125,000 over the previous year. As the service, however, is confined to departmental use, its benefit to the public is practically non-existent. It seems to promise a degree of efficiency which bespeaks well for its popularity, should it be introduced for public service at economic rates. Similar varieties can also be devised to serve as a sort of a code to those who do not habitually use that facility. Devices like the Night Letter Telegram for inland use are equally promising for making the service more freely used, and loss to Government from its working negligible.

TELEPHONES

Compared to the Telegraph, the Telephone has some advantages. It affords almost instantaneous communication with the other party, and ensures two-way traffic, which the Telegram does not possess. The slight advantage that the Telegram commands, in the shape of allowing a permanent record being kept of the communication,—which is not possible in the oral communication on the Telephone,—is more than counterbalanced by the relative cheapness of the communication by the Telephone, and still more by its instantaneous effect. Compared to the Telegram, it is, however, still very much restricted, though perhaps the charge for it is not excessive. It is also relatively much more recent, and so not yet quite so familiar to the public as the Telegram.

The Telephone service in India began as a private enterprise of a few licensed corporations with more or less a perfect monopoly in prescribed areas. These companies functioned from almost the start of the system to the day World War II was more than half through. Here, however, was a public utility whose value and effectiveness was very much increased ever since long-distance trunk telephone call became a daily reality, with its extension very soon after in the shape of wireless telephone with foreign countries.

It is very likely that, in the near future, the Telephone may take the place of the Telegram more and more, particularly as the latter's one advantage tends to be obliterated with the progress of Air Mail carriage of letters which can provide a permanent record that the Telegram offered but Telephone could not. The suggestion, however, would be premature that the Telegraph system be altogether scrapped, and its place be taken universally by the Telephone; the more so as the Telegraph is comparatively a losing business. Both Telegram and Telephone are but imperfect means to ensure secrecy of the communication made over this means. For while the former is public the moment it is handed over for transmission, the latter can be tapped, and the talk overheard. Constitutional guarantees provided for the inviolability of such communications are, in moments of emergency, of no avail.

A great deal, however, would depend upon the improvement and extension of the Telephone service itself, which is today fully liable to criticism for its many deficiencies as much as the Telegraph system. While the deficiency in the Telephone service is alleged to be due, not so much to the inefficiency of the staff as to the faults in the equipment, the plea cannot avail for all time. Here, too, moreover, extension of mechanisation in the Service, and its rationalisation will lead to much greater economy to the public authority conducting it, and at the same time add greater variety and fuller benefit of service to the people than is the case today.

Telephone Rates

In the beginning the telephone service was made available at a flat rate within each city where it commenced operations. The only gradation in the charge is according as the phone is for the home or office or club. Subsequently, however, in many cases the flat rate has been converted into the "message rate" system, whereby the charge varies according to the use made of the Service. A minimum charge is made when the machine is first introduced; a few messages daily are allowed free as being included in the initial charge. But for every message sent out above the free service, 2 annas are charged which tend to make the people regard the service as a costly luxury. The message rate is charged only to the sender of the message, the recipient being free.

This system is considered to result in disproportionately heavy incidence upon business houses, clubs, hotels, and the like, where messages have to be sent out far more frequently than is deemed economical. The system, moreover, would prevent that usual courtesy among neighbours which allows the use of one's telephone to neighbours free. The new rate has, accordingly, not replaced the old system all over the country. In recent years, however, the private licensed Telephone companies have been acquired by the State, which does not seem overanxious to provide the best service to their clientele. It is, therefore, not unlikely that the tariff may be revised radically, so as to substitute a charge varying according to the use made of the service, in place of a fixed annual rate for local calls as on the Postal system. Such devices as the Party Line Telephone are already gone, and the rate has been increased by repeated surcharges by at least 50 per cent in the last five years.

Trunk Telephone rates are varied according to the special facility required i. e. particular person call, fixed hour call, and the like. Many of these facilities have also been curtailed, or the charge in respect of them inordinately enhanced. War-time overwork, excessive wear and tear and lack of proper equipment and new instruments are the stock explanations for the continued deterioration of the Service, in addition, of course, to the alleged growth in labour inefficiency.

Notwithstanding these deficiencies, the Telephone is bound to play a much greater part in the development of a country's economy than seems to be realised today. According to the comparative figures given at a recent conference of the Communication Services, India ranks amongst the lowest of the countries using the Telephone both for local and for long-distance calls. The percentage of telephone density in the different countries was there given as follows:

U. S. A.	....	21
Canada	....	14.4
North America (as a whole)	....	15.5
Sweden	....	17.7
Switzerland	....	14.7
Denmark	....	14.2
Norway	....	10.1
Great Britain	....	8.2
India	....	0.03

Obviously this relates to the number of telephones in proportion to the population. The relative proportion would seem to be much lower in India, if one takes into account the frequency with which the service is being utilised in this country outside the official circles or more westernised elements. Here, therefore, is a vast field for improvement, which will not be a source of any loss to the authority rendering the service, but very probably of considerable gain, if only it is realised that, with increasing demand or use of such Service, the capital cost having been incurred once for all, the revenue would be much greater than if the service is run as a scarce commodity held by a monopolist for which a higher charge is made than the traffic can bear. In Britain in recent years, every device has been employed to increase the efficiency as well as frequency of the service not only by introducing such devices as the automatic exchange, but also by varying the rates for particular classes of calls, (e.g. Farmers' Service) or occasions on which the service may be used, e.g. at night or on public holidays at lower rates. For a small country like England that may be more easy than for a country of long distances like India. But, even so, if the service is desired to be effectively extended and made truly popular to its utmost capacity, the governing principle in rate-making would have to be radically revised.

Public Telephone booths will have to be increased in number far, far more than is the case today, when they are found few and far between only in principal towns. These booths can only act on the Message Rate basis; but that would be no handicap in proportion to the immense service rendered. The risk, moreover, of counterfeit coins being passed into the automatic box is apt to be very much exaggerated by the **vis inertia** of conservative officialdom. Such as it really may be we must run it in the firm belief that the proportion of such frauds on the public would be very small, now that a sense of identity between the people and their Government is steadily growing.

Another similar extension of the Service may be in the shape of permitting renting of long distance telephone lines for use exclusively by large business or industrial corporations whose operations are conducted in a number of places, and who would desire a degree of privacy which the Public Telephone does not afford in a full measure. National news agencies or newspapers may also want similar facilities to be placed at their disposal, to enable

them to bring out identical editions in different centres simultaneously. These can easily bear almost any charge which would economise on the telegram bill, or enable them to serve a larger public.

Television, also, when it becomes an economic proposition for the average citizen, can be linked up with the National Telephone System and so make the service fuller and the return from it larger. All this is a matter for the authority providing the service to consider, and give effect to. The National Plan would be incomplete if such an essential service is not included as an integral part of it, and carried out with the same fullness and intensity as any other part of the Plan,—and at the same time.

WIRELESS

Yet another form of communications is the Wireless Service in the form of overseas Wireless Telephone, Radio Telegram, and Broadcasting. Unlike the postal or telegraph service, the Wireless started, like the Telephone Service, as a private enterprise. It was, however, not worked mainly by the profit motive. Private clubs began experimenting with the dissemination of news of general interest by small sets of their own on a limited range. They, however, became so popular that Government took over the control, and operated the system by means of a corporation of their own, called the All-India Radio, which, in the latest transformation, is a department of Government known as the Ministry of Information and Broadcasting in charge of a Cabinet Minister.

To the public at large this service is of interest through receiving sets. These sets may be obtained in the open market of any make, British or American; but they can be used only on payment of an annual Licence Fee to the Post Office which derives considerable revenue from this service. The number of Licences issued is growing every year, but even so, it is not at all in proportion to the population or the area to be served in this country. The numerous uses of the Broadcasting Service, whether by way of advertisement of commercial wares, or by way of spreading information regarding crops, prices, events of general public interest at home or abroad, as well as providing entertainment, amusement or instruction by sending out on ethereal waves music, drama, lectures and debates, have yet to be more fully appreciated by the

powers that be. There are nowadays, no doubt, special services for farmers, village uplift, children, housewives, and the like. But these as well as the sister device of the talkie cinema, can be utilised far more extensively for the purpose of public education and general dissemination of useful information. These may still be said to be in their infancy. While the general conduct of such a service will have to be on the lines of public utility enterprise, it is possible to derive, while rendering the service to the community, a progressive revenue, which would be but a small price to pay for the information received, or the entertainment enjoyed. Fuller notice will be taken of this in the Summary of Developments at the end of the volume.

TOURIST TRAFFIC

The last section in the Terms of Reference to this Sub-Committee relates to the advantage of intensively developing the Tourist Traffic. Tourism has, in the present century, and particularly after World War I, become a major industry in many countries of Europe. Some of them, like Italy or Switzerland are said to live on the Tourist Traffic. Certainly the Tourist brings not only money to spend in the country, and so provides for the so-called "invisible exports" which help to maintain the exchange value of the local currency; but incidentally he serves as a most efficient medium of publicity regarding the possibilities and requirements of the country toured in. Contacts are made and opportunities offered to the people of the country visited, which may be, and frequently are, of direct economic benefit to the country attracting such traffic. Even international misunderstandings can be minimised, if not avoided altogether, if such contacts and opportunities are freely developed and fully utilised.

Until perhaps the middle of the last century, Tourism was left to shift for itself. Long foreign tours were a luxury for only the super rich who had the time as well as the means to indulge in it. With the advent of the Railway, and the cheapening and widening of travel facilities within limited time over comparatively long distances, Tourism became much more popular, first with the more settled countries of England and America, and afterwards all over the world. The former were Tourist exporters; the latter importers in the earlier years of this development. Those countries which, like Italy, Switzerland, France, or Germany, had much to interest tourists

seeking entertainment, amusement or instruction, or even plain distraction with a tinge of gratifying mere curiosity about other countries and their ways, began to perceive the immense economic potentialities of such traffic coming to them. They, therefore, slowly evolved a special organisation, in the beginning of this century, in the form of Agencies, not only to facilitate travel within their boundaries, but also to provide a permanent, country-wide exhibition of their goods and services, which the visiting tourists cannot but be attracted to. Purchases may take place on the spot; or a demand may be created for such wares in the tourist's own country when the visitor returns home. In the Age of Discoveries, it was the Tales of Wonder the traveller brought from strange people and distant lands which stimulated curiosity and intensified the desire for adventure. Travelling increased, though not for any definite aim or purpose, but just out of a blind love of adventure. Beginning with mere sea-rovers, pirates or adventurers, it developed into systematic trading by licensed corporations that eventually acquired vast colonial empires for their motherland. The pirate followed the adventurer; the trader came in the wake of the former; the conqueror came still later, followed by the merchant and the missionary, the explorer and the scientist, the student and the globe-trotter of all brands.

The Tourist Agencies, which countries like England and America developed in the first place, at their start, specialised in arranging travel facilities and tour programme for those who sought amusement or instruction. They provided well informed guides to places of interest for their clients, helping them to gratify such zest for adventure or curiosity as they had by mountain climbing or picture hunting. For the remaining countries, on the other hand, the new traffic was a paying business which not only provided travel facilities for tourists, but also arranged for hotel accommodation, or board and residence, local transportation in each place of interest, and introduction to business communities or cultural centres, like universities and churches; and also sought in every possible way to arouse interest in them as regards what they actually saw, and what they were told were the potentialities which lay behind the things visible on the surface. No small portion of the hotel industry of Switzerland, for instance, and the services supplying the hotels, thrive there and in Italy on the Tourist Traffic mainly. No doubt, the Tourist Traffic is still confined, for the most

part, to the relatively richer class; the new outlook on the contribution of Tourism in the economic development of a country tends to create facilities for the poorer and poorer strata of the community in every country. Official or semi-public organisations are set up to arrange special tours with the most economic fares, providing hotels or *pensions* of the same kind, conveyance facilities and sight-seeing expeditions, which make a very moderate demand upon the pocket, and yet afford instruction as well as entertainment, advantage as well as amusement, in no small degree.

In a country like India, with its long historical tradition, and untold monuments of past glories in every corner of the country; with its innumerable spots of scenic beauty and sanctified memories; with its variety of natural resources in material goods and cultural currents; with its numerous races and their curious customs and manners in the different parts of the land, the Tourist will have an endless source of instruction and entertainment, information and enjoyment. Profit and pleasure can be combined in innumerable ways, both for the visitor and for the country, if only the powers that be in this land of saints and sages would organise efficiently and develop systematically this fertile source of mutual benefit.

Until the liberation of India, however, the tourist stream was rather from than to India. The relatively richer class, inveterate imitators of the mighty and the powerful, was naturally attracted to European and Western Countries for pleasure or personal interest that could best be served by such visits to the homeland of their masters or the fountain heads of power and influence. Even the student class, relatively poorer as it may be, was attracted more away from India than into India. If we think of the past tradition of this country, more tourists came here in the shape of scholars, scientists, merchants or adventurers than went abroad. No doubt. Indian businessmen of centuries upon centuries past did go voyaging to distant shores; and Indian Missionaries fared forth to every land beyond the hills and seas that gird this country round. But even so, the balance of Tourism inclined more in favour of visitors to India than from her,—a situation which was radically recast in the latest age of our history.

In the British era of Indian history, the inward stream of tourists largely consisted of the official visitor from the ruling race, the idly curious or the unemployed rich.

These, more often than not, were from the start prejudiced against the country and its inhabitants, its social customs and popular institutions. The record of such visits the Ruling Race Tourist left behind him was a tissue of abuse and falsehood as exemplified by books like "Mother India" of Miss Mayo. No more distorted picture could be presented of this country than is to be found in such prejudiced productions of poisoned imagination or perverted interest. Such visitors rushed through the country with the speed of railways, if not airplanes, and gathered impressions more from chance acquaintance or official propaganda, than from any close study or observaiton of their own, such as the ancient tourists like Megasthenes from Greece or Huan Tsang from China have done. And these "guests" of the governing caste were always more costly than beneficial. The result was that in our balance of international accounts, this item drained the land of at least a crore every year without reckoning the damage done by their subsequent propaganda.

Need to Organise Tourist Traffic in Free India.

One of the first tasks of Free India must be to organise a strong agency to counteract the influence of a century-old propaganda against her, if she desires a proper dissemination of true information regarding her material and cultural resources; if she seeks to re-orient her trade and migration to bring the greatest advantage to herself; if she would, in other words, be respected amongst the free nations of the world not only as a great and populous country with infinite potentialities in trade but also one holding out a goodly promise of peace and prosperity to all mankind. The inward as well as the outward Tourist Traffic must be carefully planned and encouraged to make these contacts with the world outside a source of benefit to all concerned. Every town and municipality, every Province, State and the Central Government must mobilise and publish information about their places of interest, their facilities of travel, etc., for the Tourist, their resources and possibilities both by way of entertainment and by way of information so as to enable the visitor to take the fullest advantage. Such facilities as local, regional, provincial or national maps, guide books, history books, museums and monuments, hand-books, catalogues of indigenous products, whether of handicrafts or machine made goods, beauty spots and pilgrim centres must be compiled and presented in as

readable and interesting a manner as possible with illustrations by way of filmed record or still life photographs, so that the Tourists visit not only those places which have been advertised already by the Rulers of this country in the past, but also come to know the country and its people, their ways of life, customs and manners much more correctly or objectively than has been the case so far.

As part of this means of communication or contact, the Transport Service, in all its variety, will have to be more fully developed and liberal facilities will have to be offered to make touring as pleasant and convenient, and as expeditious and comfortable, as possible. This aspect of the problem will be discussed more fully in another Report,—that relating to the Transport Services.

Another direction in which the inward Tourist Traffic can be developed is a properly organised hotel industry, offering appropriate board and lodging facilities to suit every pocket. This industry is still in its infancy and offers a great field for public or private enterprise in the towns and villages of India. Even if the business is developed by private effort, there must be a degree of public control and supervision to guard against the tourist getting a feeling of being exploited.

A more efficient and instantaneous Communications Service by the wireless or the electric telegraph, by radio broadcasting or by cinema, with the Tourist custom specially in view, is another line of development to keep Tourists constantly informed, not only of happenings in the land he is visiting, but also in the world at large, and particularly in his own country, so that he feels least out of touch with his business or family while on tour. This would help to make the tour longer as well as more enjoyable. Special broadcasts must accordingly be arranged for different countries, in different languages, giving news, etc., from different centres, so that at the right moment these could be picked up and keep the tourists posted up in all that would ordinarily interest them.

The new class of Tourists,—the student and the commission agent, business canvasser or press correspondent,—usually has a limited expense account. But that class of tourist is a far more efficient agent for the spread of objective information about this country, its people and resources, in the world than any official organ could be. For one thing the official propaganda machine, news service, or Information Bureau, would inevitably be under the suspicion of acting as a secret censor or propaganda machine. However correct or truthful such official pro-

paganda may be, the mere fact of its being propaganda, or interested information, from the official angle would prejudice it in the eyes of the recipient. Facilities should accordingly be provided as much as possible for non-official sources to give out information, or guide with illustrated guide-books, store catalogues, industrial and commercial directories, university hand-books, to inform the tourist about places of entertainment or instruction, so that he may approach with as open a mind to the information supplied as possible. Municipalities, Universities, Chambers of Commerce, Tourist Clubs, or Religious Foundations, like the great *Maths* of this country, may well be invited to discharge this duty, as much in their own immediate interest, as for the benefit of the community as a whole.

Similar extension and improvements in the Banking Service will be no less appreciated by the modern tourist. The Traveller's cheque is a great blessing for financing the tourist most conveniently, economically and promptly. The Letter of Credit is somewhat outmoded, but the Traveller's Cheque is cheap, safe and convenient, which the National Banking System should do everything possible to encourage and popularise by providing the widest possibility for its encashment.

The State's role in its Communications Department has already been indicated above. At the risk of repetition we must add that the varied services of the Post Office, and particularly its parcels, money order and insurance side, can and must be developed far more intensively so as to facilitate travellers visiting the most distant parts of the country, and paying their way by easily acceptable media of exchange.

As stated already, all the possibilities of this line are still in embryo. The newly created Ministry of Information and Broadcasting in the Government of India is still working on the traditions developed by its predecessor in the All-India Radio. No doubt the new service is varied, and growing more so every day. But even so the various directions indicated above hold out great opportunity of immense development, which still remain untried. It will, therefore, be no small task of the planning authority to see to it that this sector of the Communications Service is developed to the fullest degree possible.

Side by side with catering for the visitors to this land, arrangements for visits for India's own citizens, students or businessmen going abroad for study, business, or pleasure need not be neglected. There is need for public

control, regulation and supervision, even in this part of the organisation. The presence of Consuls, Trade Commissioners, or even Ambassadors in other countries, must be utilised to obtain every facility and advantage for the visiting Indian in foreign countries. And, if perchance, he should want to settle there or take more permanent employment, these offices and agencies must be available to him to facilitate his task. If the ordinary duties of Consuls, Trade Commissioners, Ministers, and Ambassadors are too heavy to leave them room to cater for the casual visitor, or even for more purposeful traveller, a special branch must be opened in the offices of all these representatives of India abroad, so that no Indian in a foreign country should miss the help, counsel or guidance of the accredited representative of his own country. At the same time every means for making the visitor acquainted with the peoples and potentialities of the countries visited should be procured and made available, so that the information compiled from each one's own angle by the student, the commercial traveller, or the press reporter, may be presented to the country by the returning traveller for its own benefit.

K. T. SHAH.

REPORT OF THE SUB-COMMITTEE
ON
COMMUNICATIONS, SERVICE AND INDUSTRY

I. INTRODUCTION.

The scope of survey by the sub-committee is described by the National Planning Committee as follows: (National Planning Committee brochure No. 1, page 96)—

(a) The organisation of communications including postal service, telegraphs and telephones, as well as radio;

(b) Industries concerned with the manufacture, and connected with providing, of instruments and apparatus needed for telegraphs, telephones and radio and their parts and accessories;

(c) Encouragement of tourist traffic including hotels, travel agencies and banking facilities.

The Sub-Committee finds that the items (a) and (b) fall within their province, whereas the item (c) can be more appropriately dealt with by the Sub-Committee on Transport.

Before any attempt at planning of the development of communication system can be made, it is necessary that the functions of communication services be clearly understood and stated. The primary function of any communication system is to supply means for exchanging messages between parties separated geographically from one another. Broadly speaking, the types of messages for which the services of a communication organisation are requisitioned are: State messages, trade, industrial and commercial messages; news, social and private messages. The higher the standard of industrialisation of a country, the greater the demand for exchange of such messages and greater also the need for extensive communication facilities.

To the central administrative authority of the State the communication system is like the nerve system of a living organism. It enables the central executive to be in close and constant touch with the remotest part of the country and keeps him informed of what is happening there. In times of internal disturbances or in case of war it affords him the means of directing the operations with the least possible delay. As with the living organism so with the State, the breakdown of the communication system in any part of the country is followed by a paralysing effect on the corresponding part of the administrative machinery.

For the growth of industries and for fostering trade and commerce a network of communication services throughout the country is indispensable. The essential factors for industrial development are credit facilities, cheap power, transport and an organised marketing system; and communication systems play an important part in the production, control and distribution of cheap power, in the operation of transport systems—be they by rail, water or air—and also in the marketing of industrial products.

Again, an efficient communication system is vital to the very existence of newspapers and news agencies. Inefficiency in communication organisation leads to inefficiency of news service and to starving of publicity propaganda and the very objects for which the newspapers are published and circulated are frustrated.

Apart from maintaining contact between different individuals, the social amenities which a well organised communication service provides, and the goodwill, fellow feeling and the consciousness of national unity which the service promotes are too obvious to need elaboration.

In planning, therefore, for the development of posts, telegraphs and telephones, all these aspects of communication services should be borne in mind.

It would be useful here to recount the nature of the service rendered by each of the above agencies.

POSTS: In most countries the organisation besides carrying letters, parcels and money orders, also undertakes banking, insurance and sale of medicines. The or-

ganisation is thus an important link between the Central Government and the people in remote parts of the country.

TELEGRAPHS: Extension and development of telegraph service is a sequel to the development of postal service. Telegraphic means of communication replaces the postal service where speed is of prime importance. Efficient telegraph service is also dependent on the availability of good roads, because in the absence of same, delivery of telegrams to the outlying areas of the receiving office cannot be made speedily.

TELEPHONE: The telephone is a development of telegraph. It offers a direct means of communication—personal in the truest sense—between individuals situated miles apart. Unlike the telegraph, the telephone puts the communicating parties in direct touch with each other and the exchange of information is achieved in the quickest possible time. It can be said without any hesitation that in the long run this means of communication will largely supplant the telegraph system.

RADIO TELEGRAPH AND RADIO TELEPHONE: They are necessary for communication between parties separated by natural obstacles like sea and ocean, mountains rendered impassable by snow, forests and marshy swamps, as also between land, and moving vehicles like ships or aeroplanes. They are also useful in cases of emergency, when, due to any reason, the normal line of communications are interrupted.

RADIO BROADCASTING: Broadcasting, though it is of recent origin, has developed so fast that from a luxury it has become a necessity in all advanced countries. It has now become a powerful tool in the hands of any Government which knows how to use it. One cannot exaggerate its enormous influence in shaping the character and political views of a nation. In connection with the latter we may quote the words (without subscribing to the views expressed by them) uttered by the General Director of the Central Broadcasting Organisation of Germany—The **Reichs Rundfunk Gesellschaft**—some time ago. The Director says: "Our aim is to create by the utilisation of broadcasting, so broad a basis for National Socialism among the people that one day the whole nation will be soaked with our philosophy".

The principal functions of Broadcasting may be enumerated as follows:

- (a) Dissemination of news and useful information;
- (b) Adult education; fighting rural ignorance;
- (c) Propaganda by the State;
- (d) Entertainment.

In planning the development of Broadcasting all the above aspects have to be kept in view.

It should also be noted that for the communication services—of so vital importance to the country—as also for the broadcasting service, India is almost entirely dependent on outside assistance for the supply of equipments and apparatus. For the broadcasting, the senior staff is also invariably obtained from overseas though certain technical institutions, and Universities have begun to train technicians needed for normal maintenance work. It is therefore of utmost importance that in planning for the future, ample provision should be made both for local manufacture and for advanced training of personnel.

Again, progress in every field of communication depends on research, without which all development quickly comes to a standstill. It is only by intensive research that long distance trunk telephone has become possible and we have got the wonders of communication developments like tele-printer, facsimile telegraphy, automatic telephony, international trunking and multiple utilisation of lines and cables with carrier currents. It is true that a considerable amount of research is carried out by the large overseas manufacturing concerns in other countries and it may be argued that there is no need for research in this country. But it should not be forgotten that many problems of communication engineering are peculiar to the country and their solution can only be obtained by carrying out investigations in the country itself. In the absence of a properly equipped research institution staffed with skilled research engineers, services of foreign experts will have to be often sought and the efficient maintenance of communication systems will be at the mercy of foreign companies.

A further vital point requiring careful consideration is the future relationship between the State and the communication services, including manufacture of communi-

cation equipment. This point has to be discussed both in the light of the Government's policy towards other public utility services as also the present functional relationship between the State and the Posts & Telegraphs Department as well as the broadcasting service.

The Sub-Committee prepared a questionnaire (Appendix 2) to elicit opinion from interested parties in regard to the points mentioned above. These were sent to Chambers of Commerce, Government Departments, News Agencies, Technical Experts, Communication Concerns, etc., as detailed in Appendix 3. The questions were grouped under three heads: Line and Radio Communication, Postal Department and Radio Broadcasting. Each group had two sets of questions. One set was of a general nature in which the public utilising the services are interested and the other of a technical nature for attention of experts. A separate set of questions in the form of a letter making enquiries was prepared for the Government Communication Departments (Posts & Telegraphs and All-India Radio Department) for specific information. To these, replies have been received both from the Indian Posts and Telegraphs Department and also from the All-India Radio.

II. PRESENT STATE OF LINE AND RADIO COMMUNICATION SERVICES AND OF THE BROADCASTING SERVICE

1. Introduction:

Telegraph, telephone, radio-telegraph and radio-telephone services in India are under the control of the Indian Posts & Telegraphs Department. Local telephone services in some of the principal cities are worked by public telephone companies under licence from the Government of India. It is understood that Government of India are examining the question of taking over under their control the telephone services in the major cities of India. The radio-telegraph, radio-telephone and cable telegraph services to foreign countries are all practically in the hands of the Indian Radio and Cable Communications Co., Ltd.

2. Line plant for Telegraph and Telephone Communication:

At the end of March, 1939, the Posts & Telegraphs Department maintained 1,00,300 miles of overhead route carrying 5,13,900 miles of copper, bronze and iron conductors and 1,430 miles of aerial, under-ground and small submarine cable routes containing 1,14,300 miles of copper conductor. (These figures include wires, lines and cables maintained for Departmental use by the Central and Provincial Governments and for private parties).

3. Telegraph System:

(a) Inland Service:

For inland telegraph transmission, use of phantom circuits of copper and duplex circuits of copper and iron are commonly used. Super-phantom circuits are used

here and there in the Punjab, U.P. and Rajputana. Carrier telegraph is in use on the following routes:—

1. Bombay—Calcutta.
2. Delhi—Lahore.
3. Bombay—Madras
4. Bombay—Delhi.
5. Lucknow—Allahabad.

Two, three and four-arm Baudot systems are in operation on the circuits described above including Baudot duplex on several routes. Carrier channels provide additional Baudot and teleprinter circuits.

Telegraph channels for direct working between Bombay—Calcutta, Bombay—New Delhi, Bombay—Madras, New Delhi—Lahore and Delhi—Simla have been rented to Messrs. Reuters, Limited, who operate their own teleprinter machines for transmission of press messages between these places.

The number of **telegraph repeater stations** is 17 and the number of telegraph repeaters in a station varies from 1 to 7.

(b) Foreign Service:

Land line connections are maintained via Peshawar and via Quetta with Afghanistan; via Assam and via Arakan with Burma and via Gyantse with Tibet. Communication with Ceylon is by a cable link from Dhanushkodi to Talaimannar.

Indian Radio and Cable Communications Co., Ltd., operate the submarine cable routes between India and other parts of the world in conjunction with Cable and Wireless, Ltd. Communication with Iraq is maintained by means of a submarine cable which runs up the Persian Gulf from Karachi and is operated by Cables and Wireless, Ltd., London.

(c) Some statistical figures for the telegraph service are given in Table I below:—

Table I.

(As at year ended 1939)

1.	Inland Telegraph Offices	.. ..	9,879.
	inclusive of:		
	Departmental	.. ..	84
	Combined Posts & Telegraphs	.. ..	5,556
	Canal Telegraph Offices	.. ..	170
2.	Telegrams handled during 1938-39:		
	Inland (including Government		
	Private and Press)	13.6	million.
	Foreign	.. ..	2.77
3.	Telegraph repeater Stations		17

(d) Financial:

Results of telegraph working for the year 1938-39 are given below:

Receipts:	.. ..	Rs. 2,43,04,189.
Expenditure:	.. ..	Rs. 2,80,81,647.
Net loss:	.. ..	Rs. 37,77,458.

It may be noted that the telegraph branch of the Indian Posts and Telegraphs Department has been working at a loss since 1925-26, the maximum being in 1930-31.

4. Telephone System:

(a) Inland Service:

There are various types of manual and automatic telephone exchanges in the country. The number of small automatic exchanges is 130; these are in Bengal, Assam, Punjab, N.W.F.P., Bombay and Madras circles.

In addition to the Voice Frequency Telephony, carrier telephone channels are in operation inclusive of those under project on the following routes:

(1) Calcutta—Delhi; (2) Delhi—Lahore; (3) Lucknow—Cawnpore; (4) Calcutta—Bombay; (5) Bombay—Delhi; (6) Bombay—Ahmedabad; (7) Bombay—Karachi; (8) Bombay—Madras; (9) Madras—Bangalore; (10) Madras—Trichinopoly, and (11) Madras—Calcutta.

The types of carrier systems used are: (a) single channel carrier telephony, (b) three channel carrier tele-

phony, (c) three channel telephony with three channel carrier telegraph, (d) three channel carrier telephony with four channel carrier telegraph, and (e) short distance carrier telephone systems. Telephone repeater stations housing terminal and intermediate repeaters number 34.

(b) Foreign Service:

Telephone communication is maintained between India and Ceylon by a submarine cable between Dhanushkodi and Talaimannar laid in 1934. This channel carries very light traffic and has ample reserve capacity. (For telephone communication with foreign countries by radio, see 5(b) under Radio Communication).

(c) Some statistics of the telephone service are given in Table II below:—

Table II.

(As at year ended 1939)

1. Total number of phones (about 1 per 4,000 of population)	..	83,378
2. Number of outgoing trunk calls		2.25 million.
3. Telephone exchanges and sub-exchanges	.. ..	1980
(a) Posts & Telegraphs Department	..	274
(b) Other Government Departments and Municipalities		304
(c) Licensed Companies	..	1,402
Total		1980
4. Telephone repeaters (terminal and intermediate)	..	34

(d) Financial:

As it had been recognised that the ordinary budgetary procedure is unsuitable for proper development and timely execution of telephone projects, a "Telephone Development Fund" was created in 1938-39 with a grant of 2-1/2 crores of Rupees for the purpose. It was expected that this would be sufficient for meeting the cost of telephone works, and works on telegraph lines intended

for telephone communications during the following 5 years ending 1943-44. The principal advantage of this procedure, according to the Posts and Telegraphs Department, is that in future no telephone development will be held up during a financial year for want of funds.

The financial results of telephone working for the year 1933-39 are given below:

Receipts	.. ..	Rs. 1,00,72,931
Expenditure	.. ..	Rs. 79,67,733
Net Profit	.. ..	Rs. 21,05,198

It may be noted that since 1931-32 the telephone branch of the Department has always been a paying concern, the maximum profit being made in 1937-38.

5. Radio Communication System:

(a) Inland Service:

At the end of March, 1939, the Indian Posts and Telegraphs Department was operating 21 stations. These include (1) radio direction finding, aeronautical and shipping communication services; (2) commercial radio telegraph service; (3) commercial radio telephone service; and (4) stations installed for strategic purposes. The apparatus at these stations include 16 direction finders and 38 transmitters. Aeronautical services were maintained at 11 stations and services with ships at 5 stations. The year ending March, 1939, continued to be one of expansion to meet the rapidly increasing requirements of air services in India.

Installation of 5 short-wave communication channels for inter-aerodrome communication has recently been completed and facilities provided at 5 aerodromes for accurate direction finding with the latest type of apparatus.

(b) Foreign Service.

Wireless telegraph services between India and the United Kingdom and between India and Japan are operated by the Indian Radio and Cable Communication Co., Ltd. The former was opened in 1927 and the latter in 1933.

The same company also operates a radio telephone service with the United Kingdom and, through it, with most countries of the world. This was opened in 1933.

The Indian Posts and Telegraphs Department operates radio telephone and radio telegraph services between Madras and Rangoon and radio telegraph services between Calcutta and Bangkok, Madras and Colombo and between Peshawar and Kabul or Kashgar. India|England and India|Burma radio telephone channels carry light traffic and have considerable spare capacity. India|Burma, India|Siam and India|Ceylon radio telegraph channels are not meant for dealing with large quantities of traffic.

Recently a radio telegraph service between India and Iraq has been opened by the Cables and Wireless, Ltd.

- (c) Some statistics relating to radio communication service of the Posts and Telegraphs Department for the period 1938-39 are given in Table III below:—

Table III.

1. Number of Messages handled:

(a) Aeronautical (increase of 54% over previous year)	..	2,79,000
(b) Shipping, etc. (increase of 40% over previous year)	..	1,12,600
(c) Madras-Rangoon Service (increase of 12% over previous year)	..	3,23,000

2. Numbers of:—

(a) Radio D. F. Equipments	..	16
(b) Radio Communication (Transmitting and Receiving) equipments (P. & T. Department)	..	38
(c) Radio Telegraph Transmitters (I. R. & C. Comm. Co., Ltd.)	..	2
(d) Radio Telephone Transmitters: Posts & Telegraph Dept.	1)	
I. R. & C. Comm. Co., Ltd.	1)	2
(e) Radio Receiving Equipments. I. R. & C. Comm. Co., Ltd.,		
Telegraph	.. 2)	
Telephone	.. 1)	3
Posts and Telegraphs Department		
Telephone	..	1

(d) Financial:

It appears that this branch of electrical communication has brought profit to the Posts and Telegraphs Department. The figures for 1938-39 are as follows:—

Receipts:	..	Rs. 11,09,153
Expenditure	..	Rs. 10,67,386
Net Profit	..	Rs. 41,767

6. Manufacture, Research and Training (Line and Radio Communication Services)—Telegraph Storeyard Workshop (Alipore, Calcutta).

The total value of stores which the Posts and Telegraphs Department purchased in India during 1938-39 was Rs. 36,83,980, as against Rs. 33,50,623 during 1937-38. Purchases made from firms not established in India amounted to Rs. 12,686 only.

The Posts and Telegraphs Department pursues the policy of manufacturing in its own workshops at the Telegraph Storeyard, Alipore, Calcutta, as much of its requirements as possible having regard to efficiency and economy in production.

The manufacture of telephones of the improved H.M.T. pattern was commenced in 1939 and the number of such instruments completed during the year was 2449. Several new designs of telegraph apparatus were also evolved during the year.

Research work is under the control of the Electrical Engineer-in-Chief and investigations on the following have been carried out:—

- (a) Experiments on the operation of "Telex" system of teleprinter working directly on trunk lines;
- (b) Special investigations on noise problems on telephone circuits due to growth of electric power distribution throughout India.
- (c) Design and manufacture of a twin channel, medium frequency, carrier equipment for a range upto 300 miles.

As an example of testing work, mention might be made of testing and technical inspection of 6,00,000 lines

insulators, 21,000 telephone cords, 8,000 battery jars, 7,000 condensers and 90,00,000 miles of cable conductors.

Arrangements for the technical training of new recruits to the Department as also for giving specialised as well as refresher courses to the departmental officials are made by the Electrical Engineer-in-Chief at Alipore. 150 officials were trained in 1938-39. All work in connection with wireless training, experimental and testing work and examination for Director-General's Certificate of competency as Wireless Operator (in accordance with International Telecommunication Convention) are also under the Electrical Engineer-in-Chief.

7. Postal Service:—

(a) Present Activities.

The postal service in India is solely under the control of the Indian Posts and Telegraphs Department. Figures for various activities during 1938-39 are given in Table IV below:—

TABLE IV

No.	Items.	Present State.
1.	Number of Post Offices (Urban areas)	4,500
	Number of Post Offices (rural areas)	19,803
	Literate population served by one P.O.	957 persons. average for India.
2.	Number of letter boxes (Urban areas)	17,320
	Number of letter boxes (Rural areas)	35,833
	Literate population served by one L.B.	300 persons. average for India.
3.	Total No. of postal articles handled.	1,241 millions.
4.	Route over which mails were carried daily (excluding air routes)	1.61 lakh miles

TABLE IV (contd.)

No.	Items.	Present State.
5.	Ordinary postage stamps sold	68,982 lakhs.
	Service postage stamps ..	10,486 "
	Embossed envelopes ..	106 millions.
	Stamped post cards ..	227 "
6.	Number of inland money-order issued (ordinary and telegraphic)	40 millions.
	Number of foreign sterling money-orders exchanged	195.33 thousand
	Number of foreign rupee money-orders exchanged	19.72 lakhs.
	Number of Indian postal orders issued:	8.35 lakhs.
	Number of British postal orders sold	3.246
7.	Total number of V.P. articles sent	7.47 lakhs.
	Number of foreign V.P. and cash-on-delivery articles:	2 lakhs.
8.	Number of active Savings Bank Accounts	42.41 lakhs. (82 crores of rupees)
	Average available balance at the credit of a single depositor:	Rs. 193
	Amount invested in P.O. cash certificates:	Rs. 1,480 lakhs.
	Government securities in the custody of Accountant-General.	Rs. 1,077.13 lakhs.
	Life and endowment policies issued	4,972
	Quinine sold	16,158 lbs.

(b) Financial:

The financial results of the Postal Service for year ended March, 1939, are shown below:

Receipts	..	Rs. 8,12,73,618
Expenditure	..	Rs. 7,77,45,326
Net profit	..	Rs. 35,28,292

It may be noted that the postal service has been working at a profit since 1934-35.

8. Radio Broadcasting.

(a) Present Activities

Radio Broadcasting in India is controlled by the All-India Radio Department and has been under the Department of Communication of the Government of India since 1936. Hyderabad State maintains a small broadcasting establishment; other Indian States like Travancore, Mysore, Gwalior and Baroda have also broadcasting schemes under consideration. Figures showing the present state of development at the end of May, 1940, are given in Table V below:—

Table V.

Medium wave transmitters	11
Short wave transmitters	6
Receiving Centres for Diversity Reception, for relaying work inclusive of those under project	8
Total Aerial power (medium and short wave stations together)	94 KW
Aerial power of the most powerful medium wave station	20 KW
Aerial power of the most powerful short wave station	10 KW
Aerial power in watts per square kilometre (medium wave transmitters only)	.009 watts.
Total number of receiving sets	1,09,659
Receiving set/10,000 persons	3.3
Receiver Licence Fee per annum	Rs. 10
Number of hours of programme per day: From 5-1½ hours (say at Dacca) to 10-1½ hours (at Delhi).	

The Hyderabad State has one medium wave transmitter in operation, and another under construction.

(b) Some Technical Data:

Till about the end of May, 1940, the All-India Radio had 9 transmitting centres. There were, at these centres (a) 9 medium wave transmitters (only one of these had aerial power more than 5 KW) and (b) 6 shortwave transmitters, of which 4 had aerial power more than 5 KW. In addition, the Department had 8 receiving centres (including those under project) for relaying purposes.

Table VI below gives the aerial powers and the wavelengths of the various transmitters, as at the end of May, 1940:—

Table VI.

Type of transmitter and location.	aerial power	Wavelength: (metres)	
A. Medium Wave:			
1. Peshawar	0.25 KW	200	
2. Delhi (1) (is being remodelled)	20	338.6	
3. Lahore	5	276	
4. Lucknow	5	293.5	
5. Trichinopoly	5	396	
6. Dacca	5	257.1	
7. Calcutta (1)	1.5	270.4	
8. Bombay (1)	1.5	244	
9. Madras (1)	0.25	211	
10. Hyderabad	5	411	
11. Aurangabad (under project)	0.5	319	
	49	KW	
B. Short Wave:			
		Day	Night
12. Delhi (2)	10	31.3	60.48
13. Delhi (3)	5	19.62	31.3
14. Delhi (4) (experimental)	10		25
15. Calcutta (2)	10	31.48	61.98
16. Bombay (2)	10	31.4	61.48
17. Madras (2)	10	31.35	60.98
	55	KW	

The total aerial power of medium wave stations is about 49 KW. Wattage per sq. kilometre of area works out to be .009, the average for the whole world being over 0.1 watt and that of U.S.S.R. and U.S.A. in 1935 being 0.146 and 0.21 watt respectively. (Vide Electrotechnics, Bangalore, April, 1935).

The medium-wave stations are meant to provide a first grade (direct ray) service over the cities in which they are located and in the areas surrounding them up to distances of 10 to 80 miles depending upon the power radiated.

The 10 KW short-wave stations are meant to provide service to the presidency or distant areas up to 500 miles. Wave-lengths chosen are in conformity with the international agreements reached at the Cairo Conference in 1938, where 30, 60, 90 and 150 metre bands were allocated for broadcasting in tropical and semi-tropical countries. Attempt is made by the combined use of medium and intermediate short wave-lengths, to provide a fairly large service area in which the short-wave radiation begins to be effective where the medium wave radiation disappears. The 5 KW special shortwave transmitter at Delhi (viz. Delhi (3)) serves regions beyond 500 miles from Delhi. A fourth experimental short-wave transmitter at Delhi (viz. Delhi (4)) has been operating in the 25 metre band for news transmission to places at considerable distances from Delhi.

The receiving centres at most of the places pick up programmes from Daventry, Delhi or other Indian stations for relaying via the local stations. Such receiving stations centres are provided with special diamond aerial systems and diversity receivers to give a fade-free audio input to the local transmitter

(c) Research:

The All India Radio has been maintaining a small research section since 1936. It devotes itself mainly to maintenance problems and design of radio receivers for rural reception as well as estimating ionisation layer heights by the pulse method in the search for suitable wavelengths.

(d) Financial:

The figures for 1937-38 taken from the Indian Listener are as follows:—

Receipts from:	Rs.
Licences	4,23,064
Customs	15,94,000
Publications	1,39,187
	<hr/>
	21,56,251
Total expenditure	13,63,131
	<hr/>
Net revenue earned	7,93,120
	(7.93 lakhs)

Further, a sum of Rs. 40 lakhs was sanctioned by the Government in 1935-36 for broadcast expansion, out of which there was a balance of Rs. 24.4 lakhs at the end of 1937-38. (Indian Listener, September 7, 1938)

9. Comparative Statistics of Different Countries:

Some statistical figures for four different countries, as far as available, are given below in Table VII. The figures show the position as at end of March 1939 unless otherwise stated.

TABLE VII.

(Adapted from Electrical Communication, July, 1939, and from Electrotechnics, Bangalore, April, 1935)

Description	India	Japan	G Br & Ireland	U.S.A.
Area (in sq. Km.)	46,73,150	675,180	245,100	9,682,438
Population (in millions at the last census)	352	84	45	11.3
Telegraph Communication:				
Total number of telegrams handled (in millions) ..	16.4	66.1 **	58.6 **	207 **
Telegraph wire (in miles) .	424,000	234,000 *	243,000 *	2,320,000 x
Telephone Communication:				
Total number of telephones	83,378	1,304,693 *	3,218,704	19,453,401 x
Number of telephones per-100 persons:	0.025	2	7	15
Number of telephone conversations (in millions) ..	2.25	5,082 **	2,186 **	28,300 **
Telephone wire (including trunks, junctions, exchange lines & spares if any—in miles)	500,000 *	4,733,000 *	15,093,818	90,831,000 x
Radio Broadcasting:				
Number of medium-wave stations	11	26 ***	20 (?)	585 ***
Antenna power in watt/Sq. Km. .. ..	.009	.19 (?)	3.5 (?)	0.21 ***
Number of radio receivers/1000 population	0.33	21.7 ***	220 (?)	186.00 ***

* March 31, 1938; ** Year 1937; X January 1, 1938; Trunk calls only; † May 1940; *** January, 1935.

III. THE OBJECTIVES AND HOW TO ATTAIN THEM:

1. Telegraph Communication:

Telegraph communication is the oldest electrical communication system in India. It is comparatively more developed and still remains the cheapest means of electrical communication. For certain classes of messages, as well as for purposes of record, the telegraph is more suitable than the telephone. For the rural population the telegraph is still an indispensable means of quick communication. Development of industries and internal trade is bound to be followed by a demand for increased facilities for telegraphs. We are, therefore, of opinion that there is considerable scope for improvement and extension of the telegraph service.

We understand that the policy so far followed in regard to expansion of telegraph service has been as follows:—

- (a) Additional lines are provided when the stress of traffic actually necessitates such a step being taken.
- (b) Opening of new telegraph offices, so far as the main routes are concerned, is decided from the point of view of efficient transmission of messages between important terminal centres. With regard to outlying places, the opening of new offices is dependent on local needs, as voiced by the public; in other words, "on demand".

In order to improve the facilities and make the services more accessible, we suggest that steps should be taken to attain the following objectives **in the course of the next ten years:—**

- i. The number of telegraph offices per 100,000 persons now averaging to 3, be increased gradually to 5. This development should be proportionately more in undeveloped rural areas.
- ii. In order to minimise additional outlay on lines required for this expansion, wherever possible, phantom circuits or carrier systems be used. We recommend

that the carrier telegraph channels be increased to thrice their present number.

- iii. In regard to telegraph channels rented to news agencies for direct working between different cities, we recommend that the rates be revised from time to time to guard against any financial loss to the Government.

2. Telephone Communication:

This branch of electrical communication which has developed more rapidly since 1930-31 is becoming popular among the literate public and is being worked at a profit. The total number of 'phones at the end of March 1939 was 83,378 for the whole country. This works out to about one 'phone per 4000 persons.

In the development of Trunk Telephony in India the importance of long distance telephone communication began to be realised soon after the European War and a beginning was made in the early twenties by the installation of a few trunk circuits, more or less as an experimental measure. The existence of such convenience in other countries and their obvious advantage served as an incentive for development in India. The venture proved a success from the very beginning and ever since the first installation there has been a growing demand from the public, particularly from the commercial community for the expansion of the facilities. The Government policy took a definite shape and comparatively rapid developments took place during the last few years. The 'Carrier' principle is now being freely utilised to provide additional channels of communication. Recently Government have made provision of 2-1/2 crores of rupees to facilitate expansion of telephone service for the next five years. The policy regarding the development of local telephone exchanges has been regulated by the demand from the public and there has been considerable expansion in recent years as a result of increased public demand due to increase in industrial and commercial enterprises.

Further growth of both local and trunk telephone systems will depend upon expansion of electrical power schemes, growth of industries and development of trade and commerce. The areas hitherto undeveloped or partially developed with respect to local and trunk telephony and in which demand for telephone service is expected to

grow in the near future are indicated in Section II, Present State.

Taking all factors into consideration, we strongly recommend a scheme of expansion which would ensure an increase in the number of telephones from one per 4000 persons to one per 1500 persons in course of next ten years. The expansion should be in the areas where telephone facilities already exist as also in the areas which are undeveloped or partially developed.

As regards local telephone exchanges, automatic system should generally be used in preference to manual types, as, besides offering a speedier service, they largely eliminate operating personnel and hence working costs.

Development of local telephone systems to the extent indicated above will provide considerable traffic to the trunk systems of the country which will be called upon to handle at least 5 to 6 times the present traffic. It will, therefore, be necessary to increase the number of channels on the existing routes and open additional channels according to requirements. An economic way of meeting the demand will be to provide single or multiple channel carrier telephone circuits.

The routes on which carrier telephone systems are in operation or under contemplation are indicated in Section II—"Present State". We anticipate that within next ten years the number of the routes may have to be increased to about 40.

Further, with industrial development and growth of electrical power distribution networks, the noise-level on the telephone lines must increase. Wider use of carrier system will therefore be necessary as it will minimise this interference from creeping into the telephone channels. Problems arising in this connection may be referred to the Research and Development Organisation that we have proposed as part of all round communication development.

3. Radio Communication:

This includes (i) radio direction-finding, aeronautical and shipping services; (ii) commercial radio telegraphy and (iii) commercial radio telephony. It appears from the statistics that this branch of the Posts and Telegraphs Department is working at a profit and will continue to be so.

As regards the opening of new radio stations for the radio direction-finding and associated services, the deciding factor has mainly been the demand from principal aviation and shipping companies (like the Imperial Airways, the P. & O. and the B.I.S.N. Companies). For the opening of commercial radio telegraph and telephone stations, several considerations such as (i) demand for commercial purposes, (ii) relief of traffic congestion on existing line circuits in times of emergency and (iii) strategic needs, have determined and will continue to determine the extent of development.

Considering that radio direction-finding and associated services, specially in connection with aviation, have been a source of profit in recent years, and that the demand for this is likely to increase due to anticipated development in aviation and shipping services, we recommend an increase of radio stations from 34 to 50 in course of the next ten years.

It has been stated in the administration report of the Posts and Telegraphs Department that the existing departmental commercial radio telegraph channels, though in demand by the public, are not equipped to deal with large traffic. It appears to be almost certain that provision will have to be made for some new radio telegraph channels, for instance, between India and Malaya States or East Indies, India and the Near East, India and African Countries during the next ten years. We therefore suggest that the total number of commercial radio telegraph channels be increased to at least three times in course of the next ten years.

In addition to the Radio Telegraph channels mentioned above, a few radio telephone channels will also have to be opened for service in the near future. For instance, a direct short wave radio telephone channel between Madras and Colombo will perhaps be more suitable for connecting the Ceylon telephone subscribers to those of the Western countries through the overseas radio link.

Multi-channel ultra short wave links should also be utilised for bridging across rivers, narrow gulfs, (where installation and maintenance of submarine cables is difficult and expensive) desert country and marshy lands for connecting with the trunk system of the country.

It has been said that the Madras-Rangoon Radio Telephone Channel worked by the Posts and Telegraphs Department and the overseas radio telephone channel worked by the Indian Radio and Cable Communication Co., Ltd. do not carry much traffic. We anticipate however that with the proposed development of local and trunk telephone systems the traffic on the above channels will increase substantially.

4. Agency for "Survey and Development":

For the purpose of proper development of communication facilities, we are strongly of opinion that systematic and active planning should be carried on. The most effective way of doing this would be to create an agency in each unit of administration to carry out a detailed survey of the needs of electrical communication of the various areas concerned. In view of the extremely important part which electric communication plays in stimulating the growth of internal trade and the equable distribution of commodities, this agency ought to be an alert body whose principal duty will not only be to explore the areas where new communication systems are needed, but also to carry on publicity and propaganda work for creating a demand.

In order to guide the activities of these agencies, as also to co-ordinate the methods adopted by the various branches including the Post Office, it is necessary to have a central commercial organisation at the headquarters of the Posts & Telegraphs Department. The main function of this commercial branch will be to keep in touch with public opinion, the trade and commerce of the day, and the general industrial and commercial development of the country. This will enable the branch to formulate the forward policy advocated by us and thus generally to act as a counterweight to the rigid profit and loss policy hitherto followed. It will also be the function of this branch to make a careful study of the cost of the various services rendered and to suggest economic rates which, while keeping in view the goal to be reached, will not involve the department in large losses. We do not anticipate any heavy expense being involved in setting up an organisation of this nature as we feel that with a little readjustment of the headquarters personnel, it should be possible to create the commercial branch without much extra expense.

5. Postal Service:

The development of this service depends upon the growth of literacy, trade and commerce. Assuming that there will be substantial increase of literacy and of industrial and commercial enterprises during the next ten years as a result of national planning, we estimate that the number of post offices will have to be roughly doubled, the increase being proportionately more in the rural areas; the number of letter boxes will also have to be increased in the same proportion. In planning for this development, attention should be paid to areas so far undeveloped.

From the figures given in Section II, under "Present State", it will be seen that roughly one post office serves 1000 literate persons. This percentage, however, does not give a correct picture of the facilities offered to the rural population by the present postal services. The major part of India is rural and if we judge the facilities from that point alone, the proportion will be 1 per 3000 or more of literate persons. If we take into consideration the entire population of the country, the proportion will be infinitesimally small. Again postal facilities in rural areas are very scanty. Of the 20,000 village post offices, very few are provided with their own postman and there are numerous villages which are never visited by postmen. The villagers have to walk miles to get their letters or to post them.

We assume that with the campaign of literacy that is bound to come, the number of literate persons will increase considerably and there will be a demand for enhanced postal facilities.

The present policy for opening letter-boxes and post offices has been as follows—

(a) Installation of a letter box in an area is done by the Department on its own initiative if it finds that the traffic in that area justifies the provision of a letter box.

(b) In the matter of opening post offices, however, the policy is different. Here, the public has to take the initiative and formulate a demand for the opening of a Post Office. If on a departmental enquiry it is found that the opening of a post office will give rise to development of correspondence with revenue enough to cover the expense of the new office, an experimental office is opened. This

however, is done after collecting from the interested parties a non-returnable contribution of an amount equivalent to six months' expense of the new office. If after the period of experiment the actual revenue covers the expenses of the office, then the office is made permanent. If, however, there is a deficit, the office is kept open for a further period of six months only if a fresh non-returnable contribution is received.

We consider that a change is called for in this policy. Full recovery of cost in advance should be replaced by one of guarantee. That is to say, the interested party shall be required to make good the loss only, if there be any, after working the office for six months. With increasing literacy the initiative for opening new offices should be taken by the Department and not left to the public demand.

In order to achieve this end, the administrative machinery should be so decentralised as to enable it to come into closer contact with its clientele and anticipate their needs. The number of inspectors should be increased and their jurisdiction should be so regulated that they can carry out an effective survey of the area concerned for development of postal facilities.

There is one very important aspect of the postal service on which too much emphasis cannot be laid. A fuller use of the agency of the post office can be made for nation-building work where other facilities for such work are not readily available. The post office may be an effective agency for the dissemination of information about health, agriculture, current news and the activities of the Government of the day and thus to contribute to rural uplift. A postman is always a 'persona grata' in the village. He comes into direct contact with all classes of people in remote villages. The only other representative of Government who reaches the masses to the same extent is the village watchman. But, from the very nature of his duties, he is not so welcome as a postman. For propaganda work of Government, the postman is, therefore, the most suitable agent in an area which is not easily accessible.

6. Radio Broadcasting

The Government till now have not, in our opinion paid adequate attention to the broadcasting service and have failed to realise its immense potentialities. Funds

allocated for broadcasting developments have been strictly limited, with the result that there has been provision in general only of shortwave "second-grade" services. There has been zone expansion of first grade service by medium wave stations, but the progress has been slow.

It should not be forgotten that in view of the fact that the vast majority of the population is still illiterate and a large section of the women population do not go out in the public, radio broadcasting is perhaps the most effective link between such sections and the progressive part of India. Radio also provides an easy channel for bringing to the masses useful information on agriculture, animal husbandry, current political thoughts, etc.

In order that the broadcasting service in India may be fully effective in the national sense, the Government must have the following objectives in view:

1. To provide the populous portions of the country with first grade radio service;
2. To install community receivers on a wide scale so that educative and informative programmes might reach the largest rural population.

Further to realise these objectives it would be necessary to make provision for properly constituted programme boards, for research work and also for manufacture.

As a ten-year plan, we suggest the following developments:

(a) Installation of 32 medium wave stations distributed, as shown in sketch 1, is provisionally suggested. The distribution is made on the basis of linguistic and cultural differences, and of distribution of population in rural and urban areas.

(NOTE. For national programmes (i.e. programmes meant for the whole of the country), the present short-wave transmitters may be utilised but some of the wavelengths of transmission may need revision.)

(b) In view of increasing demand for Continental programmes, the receiving centres for relaying purposes should be increased from 8 (existing or under project) to about 20.

(c) The distribution of receivers at present in this country is roughly 3.3 per 10,000 persons (see Sec. II, 8). This number should increase to at least 2 per 1000 persons in the next ten years, because expansion of first grade service will not be of much ultimate use in the absence of a wide distribution of radio receivers.

NOTE. The distribution of broadcasting receivers may be classified under two heads—(i) Private receivers and (ii) Community receivers. Remembering that the earnings of the average middle-class educated Indian is between Rs. 75-100 per month the price of the receiver for this class of persons who will form the bulk of listeners, should not exceed Rs. 30. It is therefore of the utmost importance that cheap receivers should be made available in India. This brings us to the question of manufacturing receivers in this country which is discussed elsewhere.

(d) In order to bring the benefits of broadcasting to rural population, there should be provincial schemes for installation of the so-called "community receivers". Such receivers will be permanently installed at the village school or post office with one of the members of the staff in charge. They will be worked at definite hours of the day when special programmes for rural population are being transmitted and the villagers induced to assemble near the receivers. It is suggested that part of the cost of installation and maintenance might be borne by the villagers themselves. Supply of electricity is an essential factor for working the rural receivers but, it is believed that with the rapid development of electrification schemes as envisaged by the Planning Committee this difficulty will be substantially reduced.

(e) Assuming that we have an adequate transmitting service and wide distribution of receivers, the fullest utilisation of the service will depend upon the nature of the programme. It is, therefore, of utmost importance that proper organisation both central and regional be set up for formulating the policy regarding the nature and type of programmes to be broadcast for the greatest benefit of the country.

We suggest the formation of a "General Programme Board" which would lay down from time to time the general policy of the national programmes. Similarly

the Provincial boards will indicate the subjects which would be of immediate benefit to the rural and urban population of the provinces or regions concerned. These organisations should also determine the appropriate hours for the various classes of programmes and their durations.

(f) We recommend that a Central Broadcasting Advisory Council be attached to the Department of Communications to advise the broadcasting authorities on the development of Broadcasting service in the country. This Advisory Council should be a representative public body drawn mainly from men and women outside Government and consisting of scientists, educationists and outstanding figures in public life. It will be incumbent on the Government to pay due regard to the advice of this body in formulating their policy. Our object in proposing this Council is that the Department of Broadcasting is a comparatively new one and, because of its immense scope in nation building work, the responsibility of formulating its policy should be left in the hands of an equally responsible public body commanding the country's confidence.

(7) RESEARCH.

We strongly recommend that a "Research and Development Organisation" for all the Electrical Communication Services viz., line telephony, line telegraphy, radio telephony and radio broadcasting—be established under the Department of Communications of the Central Government. The establishment of such a combined Research Organisation for all the branches will result in economy and ensure effective co-ordination between the researches of the different branches whose fields overlap.

At present there is no collaboration between the experimental and research workers of the Posts & Telegraphs Department and the All India Radio Department on the one hand and those of the research laboratories of the Universities and other Institutions in the field of electrical communication on the other. We strongly recommend that in the interest of the development of the communication service of the country, there should be mutual co-operation between the proposed Central Research and Development organisation and the research laboratories of the Universities and other Institutions where they exist.

In formulating the detailed scheme of this Research Organisation, it should not be forgotten that the work will have to be carried out as far as possible by the nationals of the country. It should be the policy of Government, when, necessary, to send selected and experienced men to obtain further requisite training in other countries—a policy which has been successfully followed by Japan. If any non-national experts have to be employed in the beginning, these should be recruited on a contract basis to train the local personnel, and should be retained only for short periods.

We presume that a Central National Council of Scientific and Industrial Research will be established with the object of co-ordinating and guiding research leading to the most effective utilisation of the resources of the country. It is expected that the fruits of the research of this body will be available for communication services and the Research Organisation of the communication services recommended above, will make the fullest use of them. The Communication Research Organisation will freely refer, when necessary, problems of a fundamental nature to the National Council of Scientific Research.

It is to be expected that the Central National Council of Scientific and Industrial Research will utilise to the fullest extent the facilities for original investigation on communication and other problems which are now available in the universities and other Research Institutions of the country.

(8) TRAINING FACILITIES.

We suggest that steps be taken for ensuring that the overseas firms, with whom Government orders are usually placed, admit and provide facilities for practical training to Indian students in their factories and also for specialised instructions to Departmental technical staff whenever necessary. It is well known that Indian students abroad find it extremely difficult, after finishing their careers in Technical Institutes, to get themselves admitted into engineering firms for practical training. It is also highly desirable that the departmental engineers be thoroughly acquainted with the uses and the intricacies of the apparatus and instruments ordered abroad. A plan by which the Government can secure admission of such entrants to the Works of the firms concerned therefore be made.

(9) MANUFACTURE.

We have already mentioned that a certain amount of telegraph and telephone equipment is manufactured in the Telegraph Workshops, Alipore, Calcutta. This establishment should be utilised to the fullest extent and also extended with due regard to efficiency of production.

We suggest that with the equipments and staff at their disposal, the Telegraph Workshops should start the manufacture of radio receiver components. With the necessary expansion of the works, it will ultimately take up the manufacture of standard community receivers which are bound to be in great demand with the development of rural broadcasting services.

As it may not be possible for the Telegraph Workshops to meet entirely the future growing demand of communication apparatus and components, private companies should be encouraged to undertake the manufacture of such apparatus and components. The Telegraph Workshops at Alipore should be so organised as to serve as a model for other public enterprises and to supply the requisite personnel for guiding private enterprise.

In this connection we would make special mention of manufacture of cheap radio sets. At present there is practically no manufacture of radio sets worth mentioning. The very few which are made are merely assemblages of components imported from abroad. If cheap peoples' sets (price not exceeding Rs. 30) are to be produced there must be mass-production of the components including valves. A large amount of preliminary investigation will be necessary for this to ascertain how far the materials available in the country can be used for the purpose and how far it is possible to use substitute materials for those which are not available. We, therefore, recommend that investigations in this matter should be immediately undertaken not only by the Central Government but also by the Provincial Governments. In this connection the facilities available in the research laboratories of the Universities and other Institutions of the country should be fully utilised. It may be mentioned that on account of enormous mass-production which is now going on, particularly in the United States and other western countries, the small production of say 6000 sets per annum may be taken as equivalent of the surplus production of anyone

of the big factories abroad; as such, in the absence of any specific protection to the local industry, these surplus sets could be easily dumped into the Indian market at a nominal cost. Even the mere assemblers of sets have now to depend entirely on the importation of components. Under the present tariff regulation, the import duty is the same whether it be a finished set or a component thereof. The investigations suggested in the preceding paragraph will indicate the lines on which action should be taken with a view to giving the indigenous enterprises necessary facilities. (See Appendix I).

(10) OWNERSHIP AND CONTROL OF COMMUNICATION SERVICE AND RELATED INDUSTRIES.

The Communication and Broadcasting services are monopoly services directly under the control of the Government of India. In our opinion they should continue to be so. In order to make the services more efficient they should be run on commercial principles. Nevertheless, as mentioned before, the Government should maintain a forward policy of forced development to keep pace on the one hand with the growing demand in the country and on the other to create demands by stimulating the growth of trade, commerce and industries. It must be borne in mind that the development of Communication Service is a moral obligation of the State, as it holds the monopoly and no one has the authority to introduce these services even where acute need is felt by the public.

We are of opinion that industries connected with the manufacture of telegraph, telephone and radio apparatus required by the Communication Department should ordinarily be State controlled. But, as mentioned before, on account of the extent of requirements it may be necessary to depend on supply from other sources. It will, therefore, be necessary to encourage private enterprises. In such cases the manufacture of the appliances should be under the guidance and supervision of State.

IV. FINANCIAL IMPLICATIONS.

(1) INTRODUCTORY.

From the preceding sections it will be seen that a comparatively rapid development is necessary in every branch of communication in the interest of the general advancement of the country. It is, therefore, necessary that the financial policy upon which the developments will depend should, though tempered by prudence, be conceived in a more liberal spirit. An inelastic and too rigid "profit and loss" basis in providing funds for the development of postal and electrical communications will seriously hamper the growth of this important Public Utility Service. Funds ought to be provided for these developments on an intelligent anticipatory basis and schemes for which immediate "return" is not absolutely assured should not be turned down but should be carried out if there is a possibility of a good response from the public in the following few years. It will not be very difficult to make a fairly accurate estimate if an efficiently organised "Survey and Development" agency is brought into existence as has been recommended. We have good reasons to believe that the comparatively rapid development of the trunk telephone facilities of the country has been possible during the past few years only because of a forward policy.

Schemes for each branch of communication must be worked out in detail in good time, so that the funds allotted for them could be fully utilised and schemes carried out according to a preconceived plan

The financial implications for the development of each branch have been treated separately and are indicated below.

POSTAL SERVICE: We advocate that a lump sum provision should be made each year for the extension of postal facilities. The rural areas should, in our opinion, receive special attention and provision should be made for an adequate number of village postmen, rural post-

offices and letter boxes. Arrangements ought to be made for more efficient delivery work.

While the guarantee system, suggested above, will minimise the risk of total loss and afford larger facilities with limited layout, we would suggest that a provision of 4 lakhs of rupees should be made every year for expansion in course of next 10 years. This works out to be about 0.5% of the average revenue of the postal branch of the Posts and Telegraphs Department.

Telegraph, Telephone and Radio Communication Service: In the telegraph branch, the guarantee system already exists, but there is no fund specially ear-marked for development of telegraph facilities. For the telephone branch there has been, since 1938-39, a special Telephone Development Fund with a grant of 2-1/2 crores for 5 years. For the radio communication branch there is no fund allotted for development work.

We have suggested the creation of a Survey and Development agency for the above service in every administrative unit. In order to implement their investigations, a fund should be provided with which new offices and lines in telegraph branch, new exchanges and trunks in the telephone branch and new stations in the radio branch, will be installed. The grant for this purpose should be both under revenue and capital heads. Under the revenue head, a grant of 6 lakhs of rupees per annum should be made for the next 10 years. In addition, we suggest that a provision of 6 crores of rupees under capital head be made for the development of telegraph, telephone and radio communication facilities for the next 10 years.

It should be understood that if the development under any of the heads—telegraphs, telephones and radio communications—is not found to be immediately remunerative, the party or parties likely to be specially benefited at once, should be called upon to bear a portion of the burden. Each case, however, ought to be treated on its own merits and the policy in this respect should be made as elastic as possible so as to confer the greatest good to the country.

Radio Broadcasting Services: We recommend that a provision of 2 crores of rupees under capital head be made for the development of broadcasting service in a period of

.

10 years. We strongly recommend that the net revenue earned by the service should be spent only under the two heads—improvement and development of service and contributions to the Central Research and Development Organisation.

In our opinion the provincial governments should be called upon to bear a portion of the capital expenditure and also to provide sums for establishment of community receivers in the villages; as already mentioned a portion of the cost of the latter might be contributed by the rural population of the locality where the receiver is being installed.

V. SUMMARY OF THE RECOMMENDATIONS.

(To be carried out generally in course of next ten years)

The Summary of our recommendations is given below:—

1. TELEGRAPH COMMUNICATION.

- (a) The number of telegraph offices be increased from 3 to 5 per 100,000 persons.
- (b) The number of carrier telegraph channels be increased to roughly three times the present number to keep pace with the traffic requirements.
- (c) The rates at which telegraph channels are hired out to News Agencies should be revised from time to time to guard against any possible financial loss to the Government.

2. TELEPHONE COMMUNICATION.

- (a) A drive should be made for increasing the number of telephones from 1 per 4,000 persons to at least 1 per 1,500 persons.
- (b) To meet the increased pressure on trunk lines, the number of routes on which multi-channel Carrier telephones are working, be increased from 11 to at least 40.
- (c) All future installations of local telephone exchanges should generally be of the automatic type in preference to the manual type.

3. RADIO COMMUNICATION.

- (a) The number of stations dealing with direction finding and other aviation and shipping services be increased from 16 to 50.
- (b) The total number of commercial radio telegraph channels be increased to at least three times their present number.

- (c) It will be necessary to open a few short-wave and ultra-short wave radio telephone links, the former for connecting up Indian subscribers with those in nearby countries, and the latter for working in association with the trunk system of the country across large river-crossings, marshy regions, etc.

4. AGENCY FOR SURVEY AND DEVELOPMENT OF ELECTRICAL COMMUNICATION SERVICES.

For the purpose of extending electrical communication facilities, we are strongly of opinion that systematic and continued planning should be carried on. The most effective way of doing this will be to create an agency in each departmental unit of administration to carry out a detailed survey of the needs of electrical communication of the areas concerned. In view of the extremely important part which electrical communication plays in stimulating the growth of internal trade and equable distribution of commodities, this agency ought to be an alert body whose principal duty will not only be to explore the areas where new facilities are to be introduced but also to carry on publicity and propaganda work for creating such demands.

5. POSTAL SERVICE.

- (a) The number of post-offices and letter-boxes be increased to roughly double their present number. The increase should be proportionately more in the rural areas.
- (b) In the matter of opening post-offices, the present attitude of rigidly adhering to full recovery of cost in advance be replaced by one of guarantee.
- (c) We recommend that a fuller use of the agency of the post office be made for rural development work where other facilities are not readily available. For this purpose, the administrative machinery should be so strengthened as to enable it to come into closer contact with its clientele and anticipate their needs.

6. RADIO BROADCASTING SERVICE.

- (a) A fuller and a more intensive use of broadcasting be made for—(i) dissemination of news and useful

informations, (ii) adult education, (iii) propaganda by the State and (iv) entertainment.

- (b) The number of medium-wave transmitters be increased to 31 consisting of 10 of 20 KW and 21 of 5 KW aerial power on the basis of (i) language and (ii) distribution of population.
- (c) The number of receiving centres for relaying overseas programmes be increased from 8 to 20.
- (d) There should be wide distribution of radio receivers. Their number should increase from 0.3 per 1000 to at least 2 per 1000 persons, thus bringing the total up to 700,000 sets.
- (e) Community receivers should be installed in villages for the benefit of the rural population. We recommend that each provincial government appoint an agency whose duty should be to do propaganda work in connection with the same.
- (f) Central and regional Programme Boards should be set up for formulating the policy regarding programmes to be broadcast. These Boards should be directly responsible to the Department of Communications of the Central Government.
- (g) We recommend that a representative body called **Central Advisory Council** be attached to the Department in respect of Broadcasting Service. The function of this Council will be to advise the Government, in regard to the policy of expansion of the service in all its branches.

7. RESEARCH.

- (a) A combined "Central Research and Development Organisation" for the Electrical Communication Services and Radio Broadcasting Service be established under the Department of Communications of the Central Government.
- (b) Presuming that a National Council of Scientific and Industrial Research will be established with highly trained scientists, we suggest that steps should be

taken to make available the fruits of research of this body to communication services and that the Central Research and Development Organisation will fully refer, whenever necessary, problems of a fundamental nature to this Council.

8. MANUFACTURE.

- (a) The Telegraph Workshops at Alipur, Calcutta, should be utilised to the fullest extent and extended for the manufacture of telegraph and telephone apparatus as well as radio receiver components and standard community receivers.
- (b) To meet the future growing demand, private companies should be encouraged to undertake the manufacture of the apparatus and components required for communication and broadcasting services.
- (c) The Telegraph Workshops should be organised to serve as a model for other public enterprises and to supply requisite personnel for them.

9. OWNERSHIP AND CONTROL OF COMMUNICATION SERVICES AND INDUSTRIES.

- (a) The communication and broadcasting Services are monopoly services of the Government of India. We are of opinion that they should continue to be so, but should be run on commercial principles and at the same time maintain a policy of forward development.
- (b) We are of opinion that industries connected with manufacture of telegraph, telephone and radio apparatus, and instruments should ordinarily be State-owned but that private enterprises should also be encouraged.

10. PERSONNEL.

- (a) The communication services be Indianised in course of next 10 years.

The policy of the Government should be to send, whenever possible, selected and experienced Indians

to obtain higher training in foreign countries. Foreign experts, if recruited under necessity, should be employed on a contract basis and retained for short periods only.

- (b) Women be given due share in telephone and radio industries as well as in communication and broadcasting services.

11. TRAINING FACILITIES.

Arrangements be made for securing admission of Indian students and of Departmental technical staff to the factories, workshops and laboratories of the overseas firms which supply Government orders. The Indian students (who have finished courses in foreign Technical Institutes) should be given facilities for practical training and the Departmental staff for specialised instructions in regard to the apparatus and equipments ordered.

12. FINANCIAL.

- (a) The financial policy should be a more liberal one, and not always based on rigid profit and loss basis.
- (b) For potsal service, we suggest that every year a provision of 4 lakhs of rupees be made for expansion.
- (c) For telegraph, telephone and radio communication service, we suggest that a grant of 6 lakhs of rupees be made per annum under revenue head and a provision of 6 crores of rupees under capital head. (Both provisions are for development of communication facilities in course of the next 10 years.)
- (d) For broadcasting service, we suggest that a provision of 2 crores of rupees be made in course of next 10 years. We further suggest that Local Governments likely to benefit from the services should be called upon to bear a portion of the cost.
- (e) For the Central Research and Development Organisation, we suggest that a capital grant of 1 crore of rupees for buildings, library, laboratories and equipments be made in course of next 10 years and an annual grant of 3 lakhs of rupees for staff and recurring expenditure.

APPENDIX I (a)
Total values of imported Telegraph and Telephone
Instruments and cost to Importer
(Duty 30 p.c. plus 8 p.c. expenses)
Values in lacs of rupees.

COUNTRY	1936-37*		1937-38*		1938-39*		1939-40**	
	Total value	Cost to Importer	Total value	Cost to Importer	Total value	Cost to Importer	Total value	Cost to Importer
United Kingdom	16.82	23.61	15.47	21.72	17.55	24.63	7.24	10.16
Germany	1.89	2.65	6.30	8.84	4.73	6.64	1.11	1.56
Other countries	0.49	0.69	0.62	0.87	0.62	0.87	1.88	2.64
Total	19.20	26.95	22.39	31.43	22.90	32.14	10.23	14.36

* Twelve months, April 1st to March 31st.

** Ten months, April 1st to January 31st.

APPENDIX I (b)

Total values of imported component parts of Wireless receivers (other than valves) and costs to importers.

Values in lacs of rupees

Country	1936-37*		1937-38*		1938-39*		1939-40**	
	Total cost	Total cost to importer	Total cost	Total cost to importer	Total cost	Total cost to importer	Total cost	Total cost to importer
United Kingdom	5.18	8.39	5.95	9.64	3.82	6.19	2.55	4.13
Other Countries	3.13	5.07	11.51	18.65	9.77	15.82	3.03	4.91
Total	8.31	13.46	17.46	28.29	13.59	22.01	5.58	9.04

* Twelve months, April 1st to March 31st.

** Ten months, April 1st to January 31st.

APPENDIX I (c)
Total values of imported Wireless Apparatus
and costs to importer.
 Values in lacs of rupees.

Country	1936-37*			1937-38*			1938-39*			1939-40**		
	Total value	Cost to Importer	Total value	Total value	Cost to Importer	Total value	Total value	Cost to Importer	Total value	Total value	Cost to Importer	Total value
United Kingdom	12.63	19.09	15.55	23.51	16.88	25.52	14.08	21.28				
Holland	4.19	6.79	12.61	20.43	6.36	10.30	8.64	14.00				
U.S.A.	16.02	25.95	15.36	24.88	12.63	20.46	12.60	20.41				
Other countries	2.36	3.82	4.18	6.77	5.11	8.28	4.75	7.70				
Total	35.20	55.65	47.70	75.59	40.98	64.56	40.07	63.39				

* Twelve months, April 1st to March 31st.

** Ten months, April 1st to January 31st.

APPENDIX I (d)
Total imports (quantity and value) and average price of
of complete radio sets.

Country	1936-37*				1937-38*				1938-39*				1939-40**			
	Total Number	Total cost (in lacs)	Cost per set (in Rs.)	Cost per set to importer (in Rs.)	Total Number	Total cost (in lacs)	Cost per set (in Rs.)	Cost per set to importer (in Rs.)	Total Number	Total cost (in lacs)	Cost per set (in Rs.)	Cost per set to importer (in Rs.)	Total number	Total cost (in Rs.)	Cost per set (in Rs.)	Cost per set to importer (in Rs.)
United Kingdom	4378	5.77	132	200	5137	6.99	136	205	6635	8.15	123	186	9781	10.81	111	167
Holland	3862	3.81	99	160	6423	6.26	97	158	7338	5.05	69	112	8274	7.74	94	152
U.S.A.	15303	13.71	90	145	15092	12.25	81	132	11860	10.31	87	141	13152	10.41	79	128
Other Countries	3392	1.88	56	90	2915	2.61	89	145	2277	2.35	103	167	3824	3.86	101	164
Total	26925	25.17			29577	28.11			28110	25.86			35031	32.82		

* Twelve months, April 1st to March 31st.

** Ten months, April 1st to January 31st.

APPENDIX II

QUESTIONNAIRES ISSUED BY THE SUB-COMMITTEE

QUESTIONNAIRE ON "LINE AND RADIO COMMUNICATION SERVICES":

(For the General Public)

A. LOCAL TELEPHONE SERVICE:

1. Do you find your local telephone service adequate?
2. Do you get connection with your correspondent in the same town without loss of time and without mistake?
3. Do you prefer an automatic exchange to a manual exchange?
4. Do you find the existing trade and industrial centres in your Province adequately served by local telephone systems and by trunk telephone connections to other parts of the country?
5. Suggest the names of towns or centres in your Province in which demand for telephony is likely to arise or increase, due to growth of industries and agricultural developments in near future, say in the next 10 years?

B. INLAND TRUNK TELEPHONE SERVICE:

6. Do you think that the existing trunk telephone service in India is adequate and satisfactory? If not, mention the difficulties you experience.
- . Do you feel, as a result of your actual experience, that more telephone channels should be available during business hours between important centres of the country, such as Calcutta-Bombay, Bombay-Delhi, Calcutta-Delhi, etc.?

C. TELEGRAPH AND OTHER SERVICES:

8. Do you prefer telephone to telegraph?
9. Are the telegraph facilities at present available in the country adequate? Do you think more telegraph offices should be opened in the interior of the country?
- 10.(a) What is, in your opinion, the existing and potential demands for 'Picture transmission service' (Telegraph service) for the transmission of newspaper

matter such as photographs, signatures, facsimilies, etc.?

- (b) Do you think that direct teleprinter service should be extensively introduced for newspaper work and for transmitting news between commercial firms and newspaper offices on the one hand, and telegraph offices on the other?

(For News agencies and Newspaper only.)

D. RADIO TELEPHONE AND OTHER LINKS

11. Do you anticipate an increased demand for Telephone links with neighbouring countries, such as Burma, Ceylon and African countries, and also with other overseas countries? If so, give your reasons for expecting such an increased demand.

12. Are you satisfied with the existing telephone service mentioned in Qn. 11? If not, what difficulties or short-comings do you experience?

E. RADIO TELEGRAPH SERVICE

13. Do you think that the existing radio telegraph services between India and foreign countries are adequate and satisfactory? Are these services fully utilised? To what further extent are these services likely to be utilised in future by commercial firms and the general public?

14. Do you find the shore to ship telegraph service in India adequate for your requirements? (for shipping companies specially).

F. CHARGES FOR SERVICES:

15. Do you find that the charges for (a) inland telegram, (b) foreign telegram, (c) local telephone call, (d) inland trunk telephone call and (e) overseas telephone call are compatible with the economic condition of the country? Give reasons for your reply.

G. POLICY:

16. Do you consider that the expansion of Electrical Communication facilities should be determined by a rigid 'profit and loss' calculation, or is it your opinion that further expansion ought to be decided upon on a 'future prospect' basis as a Public Utility Service, and that the estimated increase of demand should be fostered by a well regulated publicity service?

**QUESTIONNAIRE ON
"LINE AND RADIO COMMUNICATION SERVICES":
(For Technical Experts)**

A. LOCAL TELEPHONE SERVICES.

1. Do you suggest the development of 'rural party-line working' in India?

2. Have you considered the feasibility of installing small exchanges in rural areas? What is your opinion regarding the existing demand for such facilities in India?

B. INLAND TRUNK TELEPHONE SERVICE.

3. What is your opinion in regard to the following:—
(a) grade of speech; (b) transmission level; (c) noise level; (d) interference level for both carrier and voice-frequency channels working on Indian trunk lines at different times of the year?

C. TELEGRAPH AND OTHER SERVICES.

4. What, in your opinion, is the relative merit of:
(1) Baudot telegraph working, (2) Teleprinter working, and (3) any other high speed telegraph system working, having regard to the special conditions prevalent in India?

D. RADIO TELEGRAPH SERVICE.

5. Do the telegraph equipments used in radio telegraph channels comply with the latest developments in the field?

6. Are new types of radio telegraph equipments introduced from time to time for improving the service?

7. What is your opinion regarding the adequacy and the effective range of shore-to-ship telegraph services in India?

E. RADIO DIRECTION-FINDING SERVICE.

8.(A) Are you of opinion that the existing direction-finding stations in India are adequate for the existing marine and aviation services?

(B) With reference to the present international convention by which local ships plying on the coasts of a country are not compelled to carry wireless equipment for voyages for less than 150 miles from port to port, are you of opinion that coastal shipping companies should be compelled to provide wireless equipment on every ship carrying passenger or cargo?

9. What would be the extent of increase, in your opinion, in the number of stations in the near future and in next 10 years, keeping in view the normal economic progress?

10. Are the direction-finding equipments used at the Indian stations, of the modern type?

11. Have you any suggestions for improving the service?

RESEARCH:

2. In view of the fact that researches carried out under Indian conditions would to a large measure help in solving the communication engineering problems met with in this country, are you of opinion that a Central Research and Development Organisation for Electrical Communication Services in India should be established?

13. Do you agree that adequate cooperation in research and development work should be maintained between Universities and higher technical institutions on the one hand and the Indian Posts & Telegraphs Department on the other?

RECRUITMENT AND TRAINING:

14. (a) What is your opinion about the present method of recruitment to the superior and subordinate engineering services of the Posts & Telegraphs Departments? Is the existing system satisfactory? If not, what improvements do you suggest?

(b) Are you of opinion that separately recruited staff possessing research qualifications and experience in Electrical Communication Engineering should be recruited for the Research and Development Organisation?

15. (a) When substantial contracts worth several lakhs are placed by the Indian Stores Department, it usually stipulates that 'whether the erection of the plant or equipment is done by the firm or the buyer, the firm's supervising engineer will be responsible for training the Staff in the running of the plant. How far is this clause effective in practice?

(b) Are you of the opinion that where a contract worth over Rs. 1,00,000 is placed with a firm, that firm should be enforced to admit at least one Indian candidate for practical experience at the firm's factories, and that a clause to this effect must be incorporated in the conditions of purchase?

MANUFACTURE:

16. In view of the fact that the Posts & Telegraphs Department have to purchase most of the apparatus and equipments from foreign firms, are you of opinion that the existing Telegraphs Workshops at Alipore should be properly equipped and extended to enable it to manufacture such apparatus and equipments?

QUESTIONNAIRE ON RADIO BROADCASTING

(For General Public)

A. POLICY**(a) General.**

1. In view of the vastness of this country what experience, in respect of finance, organisation, technical development and programme policy should be utilised from among the different countries of the world?

2. In view of the great potentiality of radio as an aid to mass uplift do you think that the policy of the Government in regard to expansion of broadcasting in India should be a 'forced development' with the help of funds of the Central Government rather than simply letting it grow as the demand increases?

3. If you favour forced development, what in your opinion ought to be the rate at which the number of radio receivers in use should increase?

NOTE:—At present the number of radio receivers per 10,000 persons is roughly as follows in the following countries:—India 3.3; Japan 220; U.S.S.R. 245; Great Britain 1760; U.S.A. 2100.

4. What in your opinion, besides the comparative poverty of the country, are the impediments to the growth of the number of radio listeners in India?

5. Do you consider the present license fee to be high? If it is reduced by 50 p.c., how much increase in the number of licenses do you expect?

6. Do you think that lack of service facilities and the high service costs are also the reasons for the slow growth of the number of listeners?

7. In order to make broadcasting a financial success do you think that sponsored programmes should be encouraged?

8. What are the reasons for which you advocate further development of broadcasting in India?

(b) Programme.

9. Are you of opinion that the present programme policy of the All India Radio has been consistent with the following fundamental objectives desirable for nation-

al development:—(1) Instilling the idea of common Indian nationality, (2) Promotion of public health and economic prosperity, and (3) spread of general education, culture and entertainment?

10. Do you think that the time allotted at present for educational broadcast from the A.I.R. Stations is adequate? Do you consider that there ought to be collaboration between educational centres such as Universities, and the A.I.R. authorities for such programmes?

11. How would you distribute the total broadcast time under the various heads, e.g., serious and light music, informative talks, drama, children and women programmes, weather and commercial intelligence, rural programmes, etc.

B. ORGANISATION

12. Are you of opinion that the administration of the All India Radio Department should properly be vested in a "Central Broadcasting Council"?

N.B.:—This Council may consist of (a) representatives of the different regions; (b) one or two eminent educationists; (c) at least three radio experts and scientists; (d) representative of the Central Legislative Assembly; (e) one woman member; and (f) the Controller of Broadcasting who should be the Secretary of the Council.

13. Give your suggestions regarding the proposed scheme of organisation shown in the sheet enclosed.

C. RADIO RECEIVER AND EQUIPMENTS, THEIR MANUFACTURE, ETC.

14. What type of sets you think are suitable for India, and what should be their prices so that they may be within reach of at least middle class people?

15. Do you think that if such sets are manufactured in India, they will be cheaper?

16. What steps do you think should be taken for encouraging the manufacture of cheap radio receivers in India?

17. What is your opinion about such manufacture being undertaken by (a) the Government (for instance, the P. & T. Works at Alipore working in association with the Research Department of the A.I.R.); (b) Government aided Companies; and (c) private companies?

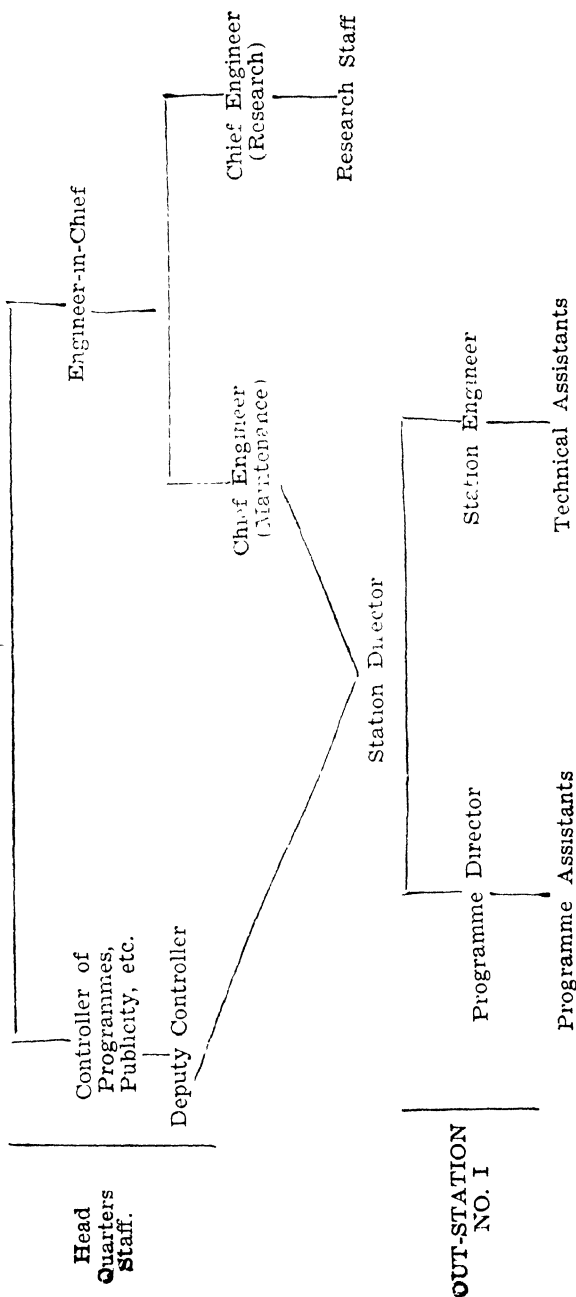
18. What other equipments and apparatus besides the radio receiver, do you think, should be manufactured in this country?

Ref. Question No. 13 of Questionnaire on Radio Broadcasting (for general public)

GOVERNMENT OF INDIA

MINISTRY OF COMMUNICATIONS

Director General of Broadcasting in India
(with Central Advisory Broadcasting Council)



OUT-STATION
NO. I

QUESTIONNAIRE ON RADIO BROADCASTING.

(For All-India Radio Department And
Other Technical Experts).

A. POLICY**(a) General.**

1. In view of the vastness of this country, what experience in respect of finance, organisation, technical development and programme policy, should be utilised from among the different countries of the world?

(b) Technical.

2. Are you of opinion that the present "low power, medium wave" and "high power, short wave" policy of the A.I.R. gives adequate and reliable coverage determined by reception free from atmospheric and other disturbances on an average receiver?
3. Do you advocate the policy of installing "high power medium wave stations" as it could give adequate and reliable coverage and enable the cheapest type of radio receivers to be used?
4. What do you consider to be the minimum field strength for a satisfactory service area of medium wave stations?
5. Are you of opinion that the wave-lengths of the medium wave stations in India are suitable from considerations of, (1) atmospheric disturbance; (2) effective conductivity and dielectric constant of ground?
6. Are you of opinion that the 30-metre and 60-metre bands used by the high power short wave transmitters are suitable from considerations of, (1) atmospheric and man-made disturbances; (2) degree of fading; (3) skipping, and (4) other propagation considerations?

B. ORGANISATION.

7. Do you think that a broadcasting organisation with a progressive policy can be complete with only

programme and maintenance-engineering departments, without a separate and well-organised research and development department?

8. Are you of opinion that the administration of the All-India Radio Department should properly be vested in a "Central Broadcasting Council."?

N.B:—This Council may consist of (a) representatives of the different regions; (b) one or two eminent educationists; (c) at least three radio experts and scientists; (d) representative of the Central Legislative Assembly; (e) one lady member; and (f) the Controller of Broadcasting who should be the Secretary of the Council.

9. Are you of opinion that the existing station staff, both programme and engineering, at different stations of the A.I.R. are adequate?
10. Give your opinion in regard to the proposed scheme of organisation shown in the sheet enclosed.

C TRANSMISSION.

(a) Medium Wave Transmission.

11. Are you of opinion that the medium wave transmitters installed by the A.I.R. during last few years incorporate the latest technical features and are satisfactory in all respects for service in India?
12. What is the average "frequency drift" of the medium wave stations in India?
13. Are you of opinion that the sites chosen for the medium wave stations are the best from considerations of effective ground conductivity?
14. What is your opinion regarding the 'effective service areas' of the following medium wave stations:—
(1) Delhi—20 KW, (2) Lahore, Lucknow, and Trichinopoly—5 KW; and (3) Calcutta and Bombay—1.5 KW during summer and winter?
15. Are you of opinion that the services of the existing medium wave stations can be improved? If so, suggest in which directions the improvements can be effected.

(c) Short Wave Transmission.

16. Are you of opinion that the short wave transmitter installed by the A.I.R. during recent years satisfy the requirements laid down by C. C. I. R.?
17. Are you of opinion that the services of the existing high power short wave stations can be improved? If so, state in which respects the improvements can be effected.
18. What is your opinion regarding reliable indirect ray service areas of short wave transmitters during daylight and dark hours at different seasons of the year?
19. What is the extent of fading experienced in the service area (referred to in Q. 18), during different hours in different seasons of the year?

(c) Studio and Control Room.

20. What is your opinion regarding the best and the cheapest method of controlling the acoustics of the Indian Studios—by controlling the geometrical disposition of the surfaces or and by controlling the nature and absorbent power of surfaces?
21. Are you of opinion that the Indian Studios, as acoustically treated at present for talks, dramas and music, are technically satisfactory for the respective purposes?
22. Are you of opinion that the control equipments installed recently by the A.I.R. incorporate the latest improvements?
23. What is your opinion regarding the method of recording speech and music as employed at present by the A.I.R.? Do you think any improvement can be effected in the present method?

D. RELAYING ARRANGEMENTS.

24. Which of the two methods of relaying do you consider to be more suitable for India—(1) Diversity Reception method, or (2) Relaying over Posts and Telegraphs trunk telephone lines.

25. What is your opinion regarding, (1) the types of aerial to be used, and (2) the spacing to be allowed between the aerials, for diversity reception work on 13, 19, 30 and 60 metre-bands?
26. Are you of opinion that a system of 'multiple unit steerable antenna' would be more suitable for the receiving centre even during periods of great solar disturbance?
27. Is the diversity receiver used at the A.I.R. receiving centres of the most improved type?

E. RADIO RECEIVER AND EQUIPMENTS, THEIR MANUFACTURE.

28. Do you think that an assemblage plant should be established to begin with?
29. If the above assemblage is attempted in the beginning what should be the reduction in customs duty on components, specially imported for the purpose?
30. About 30,000 sets are imported every year in India, do you think that an assemblage or manufacture of sets in part replacement of the yearly import will materially reduce the cost of sets?
31. What is your opinion about such manufacture being undertaken by, (a) the Government (for instance, the P. & T. Workshops at Alipore, working in association with the Research Department of the A.I.R.); (b) Government-aided companies; and (c) private companies?
32. What sort of collaboration would you suggest so that adequate technical advice from foreign countries may be easily available?
33. What form of collaboration would you suggest between the manufacturing concern and other radio research organisations and technical institutions?
34. What other equipments and apparatus besides radio receivers do you think should be manufactured in this country?

F. RESEARCH

35. Are you of opinion that for the proper development of radio broadcasting in India, both **fundamental** researches on propagation of radio waves, atmospherics, effective conductivity of soils, etc., and **technical** researches on improvement of broadcasting apparatus and equipments should be carried out?
36. Do you think that the present research section of the Engineering Department of A.I.R. is adequately staffed and equipped for carrying out such researches?
37. In addition to the research department of the A.I.R., do you favour the establishment of an independent Radio Research Board for India similar to that existing in Great Britain and Australia?
38. Are you of opinion that co-operation of the research department of the A.I.R. with the Universities, higher technical institutions and scientific bodies is desirable?

G. RECRUITMENT AND TRAINING:

39. What is your opinion in regard to the **existing** methods of recruitment to higher and lower appointments in the A.I.R.?
40. Do you favour the idea of setting up of an **independent** selection committee on the recommendation of which the Federal Public Service Commission would make the final recruitments?
41. What courses and period of training would you recommend for the staff needed for Electrical Communications Engineering in the following branches:—
 - (1) Telegraph Engineering
 - (2) Telephone Engineering;
 - (3) Radio communication including broadcasting.

42. What conditions would you add for securing adequate practical experience for those trained in these departments? How would you secure actual recruitment to services of men so trained that due importance is given to the degree and variety of practical experience obtained in addition to their theoretical knowledge?

(FOR GOVERNMENT ONLY; CONTROLLER OF BROADCASTING, DELHI): FINANCIAL:

1. What has been the accumulated revenue from customs on radio sets and component parts since 1930, when broadcasting became a Central subject?
2. What has been the yearly income since 1930 from (1) radio licences, (2) customs duty on radio goods imported; and (3) sale of publications like the 'Indian Listener'?
3. Keeping in view the normal economic development, what increase in yearly income would you expect in (1) near future, and (2) next ten years?
4. What have been the annual lump grants sanctioned by the Government for the All-India Radio Department since 1930 when Government took charge?
5. What have been the yearly expenditures on the following sections of the A.I.R. since 1930:—(a) programme, (b) News Editing and publicity, (c) maintenance of stations and receiving centres, (d) research, (e) administration (programme and engineering), at Headquarters and Stations?

QUESTIONNAIRE ON POSTAL SERVICE

(For The General Public)

1. Do you consider that the postal facilities available in your Province meet sufficiently the requirements of the public?
2. Have you any suggestions to make regarding a further increase in the number of Rural Post Offices in your Province?
3. Do you consider the present organisation of the Post Office Dept. to be as efficient and suitable as

- It should be, considering the economic conditions prevalent in the country, and the general habits of the people? If not, what changes do you suggest?
4. Do you consider the current Postal rates adequate for the requirements of the country? If not what modifications would you recommend?
 5. Is it your opinion that by reducing the existing postal rates it will be possible to obtain an increase of revenue due to the greater use of postal facilities by the public? If your reply be in the affirmative, would you mention the basis on which your conclusion is based?
 6. Are you satisfied with the working of the Savings Bank Department of the Post Office? If not, can you suggest any definite line of action by which the usefulness of this important branch of the Post Office can be enhanced?
 7. Owing to the natural organisation of the Post Office, this important department comes in direct contact with the people of the country even in its remotest corners. Have you any suggestions to make with regard to the utilisation of this Department for the welfare of the people by increasing its subsidiary activities?
 8. With regard to Q. 7, you are no doubt aware that the Post Office undertakes at present to sell quinine to the public in rural areas. Do you think this duty is being well performed by the Department? Have you any suggestions to make for the improvement of the above service and also for including in it the sale of any other standard specifics for diseases generally prevalent in rural areas?
 9. Have you any suggestions to make for the improvement of the working of the following important branches of the Post Office:—(a) Postal Cash Certificates; (b) Money Order; (c) Registration and Insurance of Postal Articles; (d) Postal Life Insurance, (e) Savings Bank. Mention any difficulties or inconveniences you might have experienced in transacting business with any of these branches.

10. Do you consider it practicable to utilise the organisation of the Post Office for spreading knowledge to people specially in rural areas, in subjects relating to Public Health and Sanitation Development of Agriculture, and other matters of general nature contributing to the welfare of the people? Any specific suggestions will be very helpful.
11. Is it your opinion that the Post Office in India should be run on a rigid 'Profit and Loss' basis or as a 'Public Utility' service? In the latter case, will the Govt. be justified in having recourse to the method of 'Forced Development' for further rapid expansion of the Department?
12. Where suitable roads exist, is it your opinion that a system of 'Moving Post Offices' in motor vans should be introduced for bringing postal facilities to the doors of the people, thus popularising the service among common people residing in villages and thereby effecting further expansion of this important public service to the good of the people?

APPENDIX III

PARTIES TO WHOM THE QUESTIONNAIRES WERE CIRCULATED

1. CHAMBERS OF COMMERCE.

Bengal Chamber of Commerce, Calcutta.
Indian Chamber of Commerce, Calcutta.
Bombay Chamber of Commerce, Bombay.
Indian Chamber of Commerce, Bombay.
Madras Chamber of Commerce, Madras.
Delhi Chamber of Commerce.
Karachi Chamber of Commerce,
Federation of Indian Chambers of Commerce
and Industry, Delhi.

2. NEWSPAPERS.

Statesman, Calcutta and Delhi.
A. B. Patrika, Calcutta.
Hindustan Standard, Calcutta.
Times of India, Bombay.
Hindu, Madras.
Bombay Chronicle, Bombay.
Hindusthan Times, Delhi.
Tribune, Lahore.
Civil and Military Gazette, Lahore.
Leader, Allahabad (Lucknow).
Pioneer, Allahabad.

3. NEWS AGENCIES.

Reuters, Calcutta.
Associated Press, Calcutta.
United Press, Calcutta.

4. FIRMS DEALING WITH COMMUNICATION EQUIPMENTS (GENERAL MANAGERS).

Standard Telephone & Cables Co., Ltd., Calcutta.
General Electric Company, Calcutta.

Ericsson Telephone Ltd., Calcutta.
Philips Electric Co. (India) Ltd., Calcutta.
Marconi Marine Communications Co., Ltd.,
Calcutta.
H.M.V. Gramophone Co., Dum Dum, Calcutta.

**5. TECHNICAL INSTITUTIONS AND INSTITUTES
(SECRETARIES).**

Institution of Engineers (India), Calcutta.
Institution of Electrical Engineers, Calcutta.
Indian Institute of Science, Bangalore.

**6. RAILWAY ADMINISTRATION (CHIEF ELEC-
TRICAL ENGINEERS).**

E. I. Railway.
E. B. Railway.
G. I. P. Railway.
N. W. Railway.
B. N. Railway.
B. B. & C. I. Railway.
M. S. M. Railway.
S. I. Railway.

7. DIRECTORS OF INDUSTRIES.

Bengal.
Assam.
Bihar.
Orissa.
U.P.
Punjab.
N.W.F.P.
C.P.
Bombay.
Sind.
Madras.
Mysore State.
Travancore State.
Hyderabad State.
Kashmir State.

**8. ELECTRICAL ADVISORS AND HEADS OF
GOVERNMENT DEPARTMENTS.**

Electrical Advisor, Bengal & Assam.
Electrical Advisor, Bihar.

Electrical Inspector, U.P.
 Electrical Inspector, Bombay.
 Electrical Inspector, Madras.
 Electrical Inspector, Punjab.
 Electrical Advisor, C.P.
 Chief Engineer, Electrical Department, Madras.
 Chief, Engineer, Hydro-Electric Branch, Punjab
 P.W.D.
 Chief Engineer, Hydro-Electric Branch, N.-W.F.P.
 Hydro Electric Engineer, U.P.
 Chief Engineer, Electrical Department, Mysore.
 Chief Engineer, Electrical Department, Bombay.
 Chief Electrical Engineer, Travancore State.

9. SECRETARY, ALL INDIA TELEGRAPH UNION,
CALCUTTA.
10. INDUSTRIAL CONGRESS, TATA, etc.
11. DIRECTOR-GENERAL OF METEOROLOGY,
POONA.
12. MEDICAL COUNCIL.
13. INDIAN STATES IN GENERAL.
14. FLYING CLUBS & AIRWAYS COMPANIES.
15. SHIPPING COMPANIES.
16. TECHNICAL AND OTHER EXPERTS.

INDIAN POSTS & TELEGRAPHS DEPARTMENT.

A Brokenshaw, Esqr.,
 Chief Engineer, Post & Telegraphs Department,
 NEW DELHI.
 P. J. Edmunds, Esqr.,
 Deputy Chief Engineer,
 Wireless, Posts & Telegraphs Deptt.,
 NEW DELHI.
 N. F. Frome, Esqr.,
 Electrical Engineer-in-Chief,
 Post & Telegraphs Deptt.,
 Alipore, CALCUTTA.

H. N. Srivastava, Esqr.,
 Officer-in-Charge of Training, Post & Telegraphs,
 Alipore, CALCUTTA.
 S. S. Moorthy Rao, Esqr.,
 Chief Electrician, Wireless, Posts & Telegraphs,
 Alipore, CALCUTTA.
 C. R. Cooke, Esqr.,
 Superintendent of Telegraph Workshops,
 Alipore, CALCUTTA.
 H. Sur, Esqr., O.B.E.,
 Deputy D.G., Telegraphs & Telephones,
 Posts & Telegraphs Department, NEW DELHI.

RETIRED OFFICERS OF POST & TELEGRAPHS DEPARTMENT.

P. N. Mitra, Esqr., C.I.E.,
 Retired Chief Engineer, Posts & Tel. Deptt.,
 103, Cornwallis Street, CALCUTTA.
 J. N. Mukherjee, Esqr., O.B.E.,
 1, Sambhunath Pandit Street,
 P.O. Elgin Road, CALCUTTA.
 A. C. Banerjee, Esqr., C.I.E.,
 Retd. Chief Engineer, Posts & Tel. Deptt.,
 29A, Ballygunge Circular Road, CALCUTTA.

ALL INDIA RADIO (ENGINEERING).

C. W. Goyder, Esqr.,
 Chief Engineer, All India Radio,
 4, Bhagwan Das Road, NEW DELHI.

HYDERABAD STATE.

Mr. Donnoll.
 Wireless Expert to H.E.H. the Nizam's Govt.,
 HYDERABAD (Deccan).

BHOPAL STATE.

Mr. Jalil A. Mazi.
 Mansab Manzil, BHOPAL

I. R. C. COMPANY.

Mr. Dockray,
 General Manager, I.R.C. Communication Co.,
 1, Apollo Bunder Road, BOMBAY.

COMPANY-WORKED TELEPHONE SYSTEMS

N. C. Bilton, Esqr.,

Chief Engineer, Bengal Telephone Corporation,
8, Hare Street, CALCUTTA.

Chief Engineer,

Bombay Telephone Co., Ltd.,
BOMBAY.

Chief Engineer,

Madras Telephone Co., Ltd.,
MADRAS.

ALL INDIA RADIO (PROGRAMME & ADMINISTRATION).

Prof. A. Bokhari, M.A. (Cantab),
Deputy Controller, All India Radio,
4, Bhagwan Das Road,
NEW DELHI.

Capt. Laxmanan, M.A. (Oxon.),
Station Director, All India Radio,
Abbot Road, LUCKNOW.

J. R. Stapleton, Esqr.,
Station Director, All India Radio,
1, Garstin Place, CALCUTTA.

17 LETTERS MAKING SPECIFIC ENQUIRIES WERE ADDRESSED TO:

(a) Director General,
Indian Posts & Telegraphs Deptt.,
NEW DELHI.

(b) Controller of Broadcasting,
NEW DELHI.
All India Radio Deptt.,

APPENDIX IV

PARTIES FROM WHOM REPLIES HAVE BEEN RECEIVED

CHAMBERS OF COMMERCE.

1. Federation of Indian Chambers of Commerce have not replied to the questionnaires as they thought other chambers would do so.
2. Indian Merchants' Chamber, Bombay.

TECHNICAL INSTITUTIONS & INSTITUTES.

3. Director, Indian Institute of Science, Bangalore.

DIRECTORS OF INDUSTRIES.

4. Director of Industries, C.P. & Berar.
5. Director of Industries & Commerce, U.P.
6. Director of Industries & Commerce, Mysore State.
7. Director of Industries, Sind.
8. Head of the Department of Industries, N.W.F.P.
(no reply, only an acknowledgment).

ELECTRICAL ADVISORS AND HEADS OF GOVERNMENT DEPARTMENTS.

9. Electrical Advisor & Chief Elec. Inspector, Bengal
(reply beyond scope of his office).
10. Electrical Inspector, Bombay Province, P.W.D.
11. Electrical Engineer and Inspector, Bihar.
12. Superintending Engineer, Electricity Deptt.,
N.W.F.P.

13. Chief Engineer, Electricity Branch, Punjab P.W.D
(has no comments to offer).

ALL INDIA TELEGRAPH UNION.

14. Secretary, All India Telegraph Union.

INDIAN STATES.

15. Chief Secretary to Government of Travancore.

FLYING CLUBS & AIRWAYS COMPANY.

16. President, the Madras Flying Club Ltd.

TECHNICAL AND OTHER EXPERTS.

17. N. F. Frome, Esqr., Posts & Tel. Deptt.
(Sent the letter to D.G. for disposal).
18. J. N. Mukherjee, Esqr., Calcutta
19. A. C. Banerjee, Esqr., Calcutta.
20. Madras Telephone Company, Ltd.
21. Telephone Engineer to Government of Travancore.
Trivandrum.
22. Station Director, All India Radio, Calcutta. (Said
letter had been sent to controller for
disposal).
23. Indian Posts & Telegraphs Department (reply to
the letter addressed to the All India Radio De-
partment sent by C. W. Goyder, Esqr.,
through the Department of Communications,
Government of India.)

RESOLUTIONS OF THE NATIONAL PLANNING COMMITTEE ON THE REPORT OF THE SUB- COMMITTEE ON COMMUNICATION SERVICES

The Report of the Communication Services Sub-Committee was presented by Sir Rahimtullah Chinoy, Chairman of the Sub-Committee on the 25th June. Dr. S. K. Mitra, Secretary of the Sub-Committee gave a brief account of the Report. Discussion concluded the same day.

The following resolutions were adopted:

1. Policy: Communications and broadcasting are public utility services affecting the well-being of the community and are at present under State Control. They should be public monopolies, and should be run on commercial lines, and developed intensively, subject to the paramount consideration that they are social services, and as such powerful agents in the task of national development.

2. Telegraphs: In view of the fact that the Telegraph is the cheapest means of quick communication and is indispensable for the rural population and also because development of industries and internal trade is bound to be followed by a demand for increased facilities for telegraphs, we propose that, to make the service more accessible, the number of Telegraph Offices be increased from the existing 3 per 1,00,000 persons to 5 per 1,00,000 in course of next ten years.

3. Telephones:

- a) In view of the expected developments of electrical power schemes, growth of industries, and expansion of trade and commerce, steps be taken to increase the number of telephones from 1 per 4,000 to 1 per 1,500 persons.

- b) All future installations of local telephone exchanges should generally be of the automatic type in preference to the manual type.

4. Radio Communications:

- a) Considering that radio direction finding and associated services specially in connection with aviation have been a source of profit in recent years and that the demand for this is bound to increase owing to the anticipated development in aviation and shipping services, an increase of Radio Stations from 34 to 50 should take place in the course of the next ten years.
 - b) The existing departmental commercial radio telegraph channels though in demand by the public are not equipped to deal with large traffic, and in the near future provision will have to be made for new radio telegraph channels, for instance, between India and Malay States, India and the near East, India and African countries. The total number of commercial radio telegraph channels should be increased to at least three times the present number.
 - c) It will be necessary to open a few short-wave and ultra-short wave radio telephone links, the former for connecting up Indian subscribers with those in nearby countries, and the latter for working in association with the trunk system of the country across large river-crossings, marshy regions, etc.
5. i) A section for survey and development of Electrical Communication Service should be established, whose function would be to carry out a detailed survey of the needs of electrical communication of the various areas concerned and also to carry on publicity and propaganda work for creating demand.
- ii) The work of this section in the different administrative divisions shall be co-ordinated by a Central organisation at the headquarters of the Post and Telegraph Department.

6. Postal Service:

- a) It is anticipated that as a result of National Planning there will be substantial increase of literacy and industrial and commercial enterprises, and that there will be increased demand for postal facilities. It is, therefore, proposed that the number of Post Offices and Letter Boxes be increased approximately to double their present number, the increase being proportionately more in rural areas.
- b) In view of the fact that the Post Office can be an effective agency for spreading information about health, agriculture, and current events, and thus contribute to rural uplift, the administrative machinery should be so strengthened as to enable the Post Office to come into closer contact with the public and meet an ever widening circle of their needs.

7. Radio Broadcasting:

- a) A fuller and more intensive use of broadcasting should be made for dissemination of news and useful information, education generally and more particularly adult education, publicity for social reform and progressive measures, and entertainment.
- b) In order to make the Broadcasting Service more effective, it is necessary that the number of transmitters be considerably increased and steps be taken to increase largely the number of receivers. The Sub-Committee recommends that, for this purpose, the number of medium-wave transmitters be increased to 31 consisting of 10 of 20 KW and 21 of 5 KW aerial power.
- c) The number of centres for relaying programmes should be increased from 8 to 20.
- d) In view of the low average earnings of the people, steps should be taken to bring down the price of receivers to within the reach of much larger numbers. A drive should be made to increase the number of sets from 3 per 10,000 to at least 3 per 1,000 in the course of the next ten years.
- e) Communication receivers should be installed in villages for the benefit of the rural population.

- f) The suggestion that the Central Broadcasting Organisation should introduce a system of providing receiver sets on hire is worthy of consideration.
- g) There should be a statutory corporation for radio broadcasting, and an advisory council, consisting of representatives of the public and experts, should be attached to it. In this connection the scheme of organisation given in the Report is deserving of consideration.

8. Research: A central research organisation for the Electrical Communication Service and Radio Broadcasting Service should be established under the Department of Communications of the Central Government.

9. Manufacture: We consider that it is absolutely necessary that the materials and components needed for the electrical communication service should be manufactured in India. For this purpose investigations should be undertaken by Government to find out how far the materials available in India are suitable. The existing workshops at Alipore and Calcutta should be utilised fully for this production, and such additional steps should be taken as may be considered necessary.

10. Training Facilities: In order to provide the requisite training facilities for Indian students as well as Government employees selected for the purpose, steps should be taken to ensure that overseas as well as Indian firms, with whom Government orders for stores are placed, shall, afford all such facilities in their factories, workshops and laboratories. This may be secured by a specific clause in such contracts. Arrangements should also be made to provide suitable employment for such trained personnel after they have finished their training.

11. The N.P.C. agrees with the Sub-Committee that the financial policy in regard to these services should be a liberal one and not based exclusively on a calculation of profit and loss. The social aspect of these services must always be borne in mind. In this connection the financial recommendations of the Sub-Committee are deserving of consideration.

(It was pointed out that, in the terms of reference of the Communication Services Sub-Committee, Tourist Traf-

fic, etc. had also been included, but the Sub-Committee had felt that this did not fall within their province. The N.P.C. agreed to this. It was felt however that the subject was an important one and should be dealt with separately. Mr. Ambalal Sarabhai was asked to draft a resolution on it.)

SUMMARY OF DEVELOPMENTS

Perhaps in no other single field have so many inventions and discoveries taken place, during the interval that the National Planning Committee began work and the present day, as in the means and technique of Communications. Nevertheless, the Communications Service of India has not benefitted through these developments—at least for public use—as much as might have been expected. For wartime requirements, no doubt, such revolutionary inventions as radio direction finding devices, facilitating aerial navigation even in the dark, and other connected improvements, were utilised even in the Indian Army, but that did not mean advance in the popular service available to the Indian people. For one thing, the technical personnel, skilled in their use, was mostly of foreign extraction. The material and equipment, also, were of foreign manufacture not available or produced in this country. True, the remnants of wartime stores, both of the American Army based upon India and of the British were largely disposed of in this land. But that was either unserviceable, or so damaged that the machines and instruments were beyond repair. The spare parts were, of course, unavailable. Many of those gadgets, apparatus or instruments, disposed of in this country, have proved of little avail to improve the public service in Communications as one would have expected.

New equipment and machinery for the same purpose are also lacking, not being produced in this country. The prevailing inefficiency and shortcomings in the ordinary Postal Service could be easily remedied if appropriate mechanical devices for sorting, collecting, or delivering postal articles could be introduced. But that is impossible, though they form such an important feature of the principal post offices in advanced countries. Not only do we not produce ourselves such machinery, nor can we import it for lack of Dollar Exchange, but there is also the lurking feeling that the introduction of mechanisation on a large scale would throw out of employment large numbers now engaged in these tasks, for whom we have no plans

of alternative employment. Our political leaders are unconsciously afraid of such mass unemployment being suddenly created by their own policies and measures; and this fear will continue while they are still new to the vagaries of adult franchise. But this fear is born of a very short-sighted view of such problems. They could have presented grave difficulties in the days when the country's national economy was working anyhow, without a plan or purpose. Given, however, a comprehensive Plan, this ought to cause no more than a temporary displacement of some workers, soon to be absorbed in other directions when every sector of the national life is expected to be covered by a scientific plan. And as for the present lack of the necessary machinery and equipment, if only the will to mechanise is there, the lack of proper instruments and apparatus, patents or designs would not hinder the programme of advance. Such simple devices as the automatic stamp-vending machine, mechanical sorters, or underground tubes and chutes for conveying posted articles straight from the office, factory, workshop or establishment to the post office carrying them to destination, or devices whereby several telegrams or telephone conversations could be made on the same wire; or improved mechanical devices in the telegraph office whereby one clerk can handle five or ten times the messages at present handled in the ordinary telegraph office in India, can be easily imported and utilised, resulting in considerable economy in operating costs, great public convenience and considerable increase in the service efficiency.

The innovations suggested in the Introduction regarding relaxation or remodelling or regulations governing the Postal Savings Bank System, or the carriage of ordinary insured or V.P. Parcels; the insurance service, the vending of patent medicines like quinine, and other such mass requirements of daily life illustrate directions in which the Service can be extended, without necessarily seeking a surplus in the Budget. These would not necessitate any very considerable extension of mechanical devices, but such as are needed for the proper working of these additional services. Facilities like tabulating machines or franking machines; mechanised delivery service; multiplication of post offices and expansion in the postal facilities must be commensurate with the place of the Communications Service in the nationally planned programme of development.

Those facilities, again,—like the greetings telegram, for example—or the multiplication of the advertising medium through the post office, or special rates for book-post and other parcels, and relaxation of limits on weight or space occupied by them with specially designed and equipped vehicles for carrying particular articles, e.g. cold-storage vans for the carriage of perishable articles like fruit or milk,—might depend to a considerable extent upon the co-operation of other services and utilities, like the railways and transport agencies in general. For they must produce and provide such special types of vehicles and ‘their’ corresponding equipment, so as to make easily available this facility. But that, again, would have to be part of an all-round national planning carried out simultaneously on all fronts, and not an excuse for sitting tight with folded hands in the Post Office.

At the present time, however, every proposal for improvement or extension in the several Ministries of the Government of India, is put forward still ‘ad hoc,’ and without any inter-linking or co-ordination on an all-embracing national scale. And herein lies the justification of an all-round comprehensive National Plan of the type that this Series has envisaged throughout. Only under such a Plan can progress be simultaneous on all fronts,—industries and agriculture, commerce and culture,—so that the advance in one item, will not be held up for lack of corresponding development in another where such advance is dependent on progress corresponding in other branches of the service or utility.

It is only under such a Plan, moreover, that the danger of causing local or casual unemployment by the extension of Mechanisation saving human labour would be avoided. For the Planning Authority will have to see to it that the total available labour force of the community is distributed and allocated from time to time in adequate degree in the several means of production and distribution, so as to provide for the fullest possible employment of every available worker, and adjust local disturbances or displacements by finding alternatives in other sectors of the National Plan.

Nationalisation of the Telephone Service

Apart from the yet unthought of remedying of these defects and shortcomings in the Communication Services,

recent developments have taken the shape of Nationalisation of the Telephone Service in the principal towns of India. The licensed private companies which operated the service as monopolists in the license zone, have been bought out with heavy compensation, and the entire service now becomes a national monopoly. From the beginning of 1943-44 the Telephone Companies of Bombay, Calcutta and Karachi have been acquired by the State, the private shareholders being paid off. Many defects, delays and deficiencies are reported and admitted by the authorities concerned generally. They excuse themselves on the usual hackneyed plea of the obsolescence or over-work of their machinery, lack of sufficient up-to-date equipment, and of technically adequate personnel. As noted elsewhere, this is a handicap which can be easily remedied even though prices and wages are high. The war has given such a filip to the trade and industry of the country, within and outside its frontiers, and the utility of the telephone has come to be so widely appreciated as a convenience and economy, that a far greater demand exists for these indispensable adjuncts to modern life than was thought of likely ten years ago. And those who want and value this convenience would pay fairly for it. A formidable waiting list of new applicants for the Telephone Service meets the eye in every centre. But the authorities are yet unable, two years after the war, to meet this demand. It would be progressively increasing, even if it is satisfied as it stands. It must, therefore, be one of the first priorities for the Planning Authority to meet this demand as soon as possible, and extend the service, both local and trunk, at the earliest opportunity. Charges for it should be framed with full realisation of the law of increasing returns by low charges and variety of facility.

Mention has been made above of the superiority of the Telephone Service over the Telegraph, as well as of its handicap. The two Services must, therefore, be integrated or co-ordinated in the National Plan, so as to function side by side, without either of them taking altogether the place of the other. In a modern industrial community of such a large area as ours, all the forms and facilities one can devise for communications would be needed and utilised. Even the Radio Telephone would need to be extended and, therefore, the present facilities are no more than the just demand of a progressing economy. Even if the Message Rate is universalised to make the charge correspond to the value of the service rendered, the variation and

gradation of the charge during specified hours of the day, on holidays, for schools, hospitals or clubs, for theatres or race-tracks, for home and for office, over long distance or short, must be carefully adjusted so that the Service operates truly as a public utility.

Radio Broadcasting

The greatest single development, however, has occurred in the case of broadcasting as it is generally known. It began very soon after World War I, when the utility of radio transmission of news became first apparent. Previous to that this device was mostly used on ocean-going steamers, and that, too, mainly for life-saving purposes, with a view to meet sudden, grave emergencies, rather than as a common help in navigation.

After the War of 1914-18, and particularly since the thirties, it has come into daily use in aerial navigation, by supplying frequent information about weather and climatic conditions, providing data for the guidance of air-planes in landing, or for communication between the ground staff and the pilot, and a variety of propaganda, the potentiality of which the World War II had amply revealed, not to mention the intensive utilization of this service under such masters of propaganda as the late Dr. Goebbels.

Broadcasting started in India on a very limited scale, originally, by Radio Clubs in the Presidency Towns of Calcutta, Madras and Bombay. Their transmitting sets were of very low power and limited range. Nevertheless their broadcasts were popular in the regions they served.

To encourage the enterprise without incurring too much liability or financial burden upon the public purse, Government adopted the device of giving financial subsidies to these clubs, based upon the revenue they derived from the licence fees from receiving sets. But this was not enough to develop the Service in proportion to its growing significance in the daily life of the people. After several years of negotiation, an Indian Broadcasting Corporation was formed as a specially licensed statutory body on the model of the British Broadcasting Corporation, to provide news, information of general interest, and cultural

broadcasts. It was practically a public monopoly, though worked by a statutory corporation, which claimed to have the fullest freedom of expression for all views, and professed to function as a non-political, non-propaganda machine. In the days before India gained her freedom, these professions were apt to be heavily discounted by the people of the country, as it was widely believed to act as the propaganda machine in the service of the foreign government. Many Indians refrained from collaborating for that reason only.

Whether or not popular outlook has changed, the transmission of news, information and cultural broadcasts began from the principal centres at Bombay (July, '27) and Calcutta (August). Each of these stations had an aerial input of $1\frac{1}{2}$ K.W. The programmes were so arranged that both Indian and European music could be broadcast daily, and news bulletins, market reports and weather conditions were given out in the Hindustani as well as English languages.

This corporation, however, had a short-lived history. It went into liquidation early in 1930, after which the Government of India took over; and they are now controlling Broadcasting in India as a public monopoly. The Indian State Broadcasting Service was formed as another statutory corporation, which has since been named All India Radio, with a Central Broadcasting Advisory Committee at Delhi, and a steadily growing staff of general and technical directors, announcers and organisers, helped by specialists in every field. The last named are attracted by a fee, varying with the status of the individual and the importance of his contribution. In 1934 this was further developed. A grant of Rs. 2-1/2 lakhs was made for a 20 K.W. medium wave station, to be established at Delhi, which began to function from 1st January 1936. In that year a special fund of Rs. 40 lakhs was created for intensive development of the broadcasting service. By this time, medium wave centres had been developed also at Bombay and Calcutta, and a 0.25 K.W. medium wave centre at Peshawar, placed under the charge of the N.W.F.P. Government.

These plans for expansion were completed between 1937 and 1942. During the War, the various centres were fully utilised for the purpose of propaganda, as well as dissemination of news and general information calculated to keep up the morale of the people. The volume and

variety of the service has been steadily expanding, with new objectives that the advent of popular government has rendered necessary.

A spacious, handsome, centrally situated Broadcasting House was built in 1934 in Delhi, with up-to-date fully equipped studios and suitable acoustics, patterned to suit every variety of sound production, control room, and other equipment of the highest efficiency. A 100 K.W. Transmitter capable of providing a Broadcasting Service to distant countries outside India was opened on May 1, 1944, which made a landmark in the history of the Broadcasting in India. Local listeners have also been catered for by the medium wave Regional Transmitter with a radius of 299 miles, and short-wave transmitters providing second-grade service for distant listeners within a radius of 500 miles.

As India had become an important war base from the entry of Japan and America into the War, the British Government requested the All-India Radio to install at Delhi more short-wave Transmitters including one 100 K.W. machine as an urgent war measure. The programme was carried out to schedule. The receiving centre at each broadcasting station is the link between the Central News Organisation at Delhi and the station itself, which is further required by the station for relaying important broadcasts from Delhi.

It is unnecessary to go further into the details of these developments on the technical side. The popularity of the service may be measured from the growth of the post office receiver's licences, which is indicated in the following table:—

Year	Licences
1933	9 275
1934	12,037
1935	17,881
1936	28,066
1937	42 152
1938	52,883
1939	72 282
1940	97,537
1941	1,25 347
1942	1,55 733
1943	1,67,123
1944	1,80,660
1945	1,99,589
1946	2,05,139

Another indication of the growing popularity of this new service is to be found in the increasing imports of radio sets. Imports of wireless apparatus are shown in the Table below.

Year	Imports Value in lakhs of Rupees
1933 - 4	11.00
1937 - 8	47.70
1938 - 9	49.39
1939-40	49.80
1940-41	44.30
1941-42	52.80
1944-45	13.20

The decline in the later war years was due mainly to the inability to obtain these apparatus from the principal centres of supply, and also because of shipping restrictions. Since the War ended, the upward curve has again appeared though even now shipping and exchange restrictions are serious handicaps to the growth of this trade. For the first nine months of 1945-46 the total value of imports was Rs. 15 lakhs, suggesting an annual average of Rs. 20 lakhs. The number of sets imported was 5,000 in 1943-44; it declined to 895 in 1944-45 and rose again to 2,232 in the nine months of 1945-46.

India cannot afford, however, to depend on foreign imports if she would develop this essential service to its maximum capacity. She must have her own industry to build up her own Transmitters and Reception Sets and all other equipment needed. A company has been formed to produce Radio Receiving Sets, which is reported to be turning out some five hundred sets a month. Steps have been taken in the current year to set up radio valve manufacture in the country aided with some kind of subsidy. It will not suffice merely to assemble parts imported from abroad; we must produce these parts ourselves. The rapid growth of this industry must attract the attention of the Central Government in a much fuller measure even than that devoted to the Information and Broadcasting Service.

A programme of postwar development is sketched out in this section of the Communication Services, which offers a good challenge to the other branches of the service where apparently very little postwar planning seems to have been done so far. In November 1944 a Basic Plan for developing broadcasting in India was drawn up to be carried out by the Central Government as a postwar measure. It was revised in September 1945 to include a special External Broadcasting arrangement, and provided for the wholesale reorganisation of the Central Directorate and the other units located in Delhi.

The objects of the Basic Plan were:—

(a) to provide two different Broadcast Services—an Urban Service in large cities and towns, and over thickly populated industrialised areas; and a Rural Service for the whole of the country from two different sets of transmitters:

(i) The Urban Service must provide a variety of programmes in 19 major languages of the country, both informative and cultural; and

(ii) Rural Service to provide programmes in 125 local languages and dialects of the country, of interest directly to the agricultural masses;

(b) Also an alternative Urban Service (Zonal programme) over certain areas where the density of population is high.

This postwar scheme also aims at contacting each of the 700,000 villages of this country with a Community Radio Receiving Set, and over 130 transmitting stations, broadcasting instructional and entertaining programmes for the benefit of the rural population. School broadcasts and children's hour, women's hour and other such special arrangements for given classes are of growing importance. The Radio has admittedly been of yeomen service in the Rural Uplift programmes, which have been in vogue since the Congress Party first assumed responsibility of government under the Act of 1935. The utility of this service is becoming more and more manifest. In the latest proposals for developing it, great emphasis is laid upon Information and Broadcasting for the proper education

of the masses, and their enlightenment as regards the important problems of domestic policy and foreign relations.

On the side of foreign relations of this country, it is realised that knowledge about India, her resources and requirements, her peoples and problems, should be made available to every member of the United Nations as well as those who may not have joined that congregation. In the past, this country has suffered incalculably from the subtle propaganda against her political aspirations and economic ambitions carried on by interested parties. There is also appalling ignorance about India and her social system, political ideals and economic conditions, in countries like the United States, others in Europe and Asia, with whom it is of importance that we have good understanding. While Britain ruled India, and had a practical monopoly of spreading information about India abroad, we had no option but to accept prevailing misconception throughout the world about our status and prospects, our policy and programme of action. Independent India could no longer afford to allow this ignorance or misconception to prevail among her neighbours, friends or customers. The British regime had its own reasons not only to tolerate but also to bring about such misconception. These reasons no longer hold good with India as an independent Sovereign State by herself. India must, therefore, make the best and most active arrangements she possibly can for publicising to the world her resources and requirements, her social, political and economic conditions, prospects and plans; her cultural potentiality and political strength. And no single medium in this regard can be as effective as the Communication Service and particularly its wireless branch. A separate Ministry of Information and Broadcasting is none too soon to have; nor would it be wise economy or farsighted statesmanship to be miserly in financing its activities.

Again just as India needs to inform the world about her own conditions and ambitions, so too should she know what other countries stand for, what their possibilities may be. If there is ignorance or misconception about India in the Western World, there is no less ignorance in India about those countries, their social and political set up, their religious or philosophical trends of thought, their scientific achievements and economic endeavours. Whe-

ther or not India should copy or emulate other countries in any such matters, she must have knowledge of the current developments amongst her neighbours and customers, if only the better to maintain her own security and to adopt more effective measures for her own prosperity. International contacts are of the utmost value in the cultural as well as economic development of any unit in the world nowadays. We can no longer go back to the days of local self-sufficiency, even for a country as large as this. And if we are to have both economic and cultural contacts or relations with other countries in the shape of advantageous trade and helpful diplomatic relations, it would be as well to see that every means of publicity and communication is developed and worked to the utmost.

The Information and Broadcasting Ministry of the Government of India (functioning as part of the Home Ministry) has already taken some steps in this direction. A fair provision will be made in the next Budget for 1948-49, to develop these branches. For internal development, also, more intensive activity is likely to take place in the near future. A network of Receiving and Relaying stations will be set up in less than five years all over the country, when not a village but would have its community receiving set for constant broadcasts of news or other information of interest to the villager in his own language.

Development in the Postal Service

On the Postal and Telegraph side, as has already been noted, plans of postwar development, if made by the Department, have not been publicised as it is urgently necessary today. The ideal of a full fledged Post Office, with all its services and facilities in every village of the country is not impossible to attain. It is said that, even as at present proposed, the Department would aim at establishing a post office with limited service in every centre of 2,000 souls. This would mean something like 150,000 such offices in the Dominion of India as against the 26,924 Post Offices at work at the end of 1944-45, when this country was undivided. The new Dominion of India probably has now about 20,000 such offices, which will have to be multiplied eight or ten times before even the limited ideal, contemplated now by the postal authorities, is attained.

With the progress of literacy and adoption of a system of Compulsory Basic Education for a full period of seven years for every child in the community, with the growth of consciousness of political rights and economic needs amongst the masses, with the progress of the press and other social services like Insurance, such a programme of development would be little more than meeting the most urgent need in the coming quinquennium.

It is, of course, not enough merely to establish more Post Offices in the country. They must offer full and varied service to the community with promptness, regularity and efficiency which seem at present to be sadly lacking. Suggestions have been put forward in the Introduction to increase the variety and improve the efficiency of the Services and facilities actually offered; as also for improving the efficiency of the Service by a progressively growing mechanisation. These will have to be acted upon if the Communications Service of the country is in fitness with her area and population, her planned programme of all round development.

Among other noteworthy developments in recent times, note may be taken of the growth of the air mail service carrying both letters and parcels between the principal centres of the country. The volume of traffic carried by air has grown very rapidly in the years following the War. Even before the War, communication with Britain and some of its Dominions as well as the United States was established by air on a five-day weekly service, and with a slightly higher postage rate than that prevailing inland. During the war the old services were suspended, and the air mail postage to Britain, the Dominions, U. S. A., and other foreign lands has been substantially stepped up both for foreign and inland air mail, where a surcharge of one anna per every tola is levied over and above the ordinary postage.

There are many reasons why the air mail is for the time being not easy to extend throughout the country. Not only every town does not boast of a proper aerodrome, with adequate runway, offices, personnel, weather and control tower and the like; but the Service is sufficiently costly to deter large-scale use of it in a relatively very poor country, notwithstanding the immense saving in time that this means of communication affords. As stated elsewhere, owing to the prevailing inefficiency in the

Telegraph Service, and the difficulty of getting through on the trunk lines of the Telephone, the air mail has become actually a quicker and cheaper means of communication between the principal towns, than the telegram or even the telephone. But even so, its use remains still limited, though rapidly rising. It must accordingly be amongst the highest priorities to develop the inland air mail service between the principal centres of population in the country, with charges that would not act as too heavy a burden upon those who avail themselves of the Service.

A good beginning has been made to establish India's own Foreign Air Mail Service. The Government of India have arranged to float a special Corporation, in association with an existing private air service, to provide transport facilities for passengers and mails by air to foreign countries beginning with Britain and the United States. The State is to own half the capital, and make good the loss so long as the Corporation is unable to make both ends meet. A handsome commission is to be paid to the private company for its managerial service to the new Corporation. Government is entitled to a share in the general direction of the Corporation, and also in its profit though the management would for 15 or 20 years be entrusted to the private company, associated with the State in running this Service.

Extension of air mail service within the country and its development with foreign countries is another direction in which some progress has been made in recent years; but far more remains to be done. Several towns are now connected by a daily air-mail service; but these are few and far between. Such as it is, the service is operated by private companies, who receive a subsidy from the State. They cannot be expected to exclude profit from their plans—if any—for the extension of the facility. If the Service is to be made available in all parts of the country, the State will have to have a much greater say in its operation than a mere subsidy will entitle it to.

As in the case of the Radio Service, we cannot hope to achieve our goal, if for all time to come we depend on foreign imports for the necessary equipment and instruments. India has no Telephone making industry, within her own borders, worth the name. The Post Office or

Communications Ministry must, accordingly, see to it that the necessary industry is developed in the country in as short a time as possible to equip adequately and maintain efficiently this great Public Utility.

Carriage of mails along the coasts of India is another line of development that may well help in developing a number of ports or outlets to aid the growth of foreign trade, which at present suffers because of a limited number of outlets. As this problem is connected intimately with the general question of Transport Services, no further comment need be made in this place, as another Report in this Series is devoted to the means of Transport and their development.

On the personnel side, there has been a tardy recognition recently of the claims of the worker in this great public monopoly. Within one year after the end of the War, a general strike of the Postal and Telegraph employees was called, to obtain better pay and prospects for the rank and file. The strike lasted for a number of weeks, because of the firmness with which either side took its stand. In the end, a compromise solution was reached, which deferred the question of pay improvement till the Report of the Central Pay Commission was out. That report was published in May 1947, and the employees of the Post Office, Telegraphs, Telephones, Broadcasting, Railways, and other Departments, have all benefitted in accordance with those recommendations which the Government of India have accepted in general. This does not indeed mean that all the grievances or claims of the workers have been fully met and satisfied. But the precedent set amongst its very first acts by the popular Government will be valuable for setting a line of policy, which may well postpone or defer the coming conflict between worker and employer, whether the latter is a private individual corporation, or the State in any of its forms, Central and Provincial Governments, Municipal Bodies, or District Authorities.

The increase in establishment charges need not make the service more costly, and so justify a further increase in the service charges. The proper and more paying way to operate the service in all its branches is to increase its variety and efficiency, and at the same time reduce the rates. Efficiency can be increased in many ways, but chiefly by progressive mechanisation. If the volume and

variety of the service is increased by mechanisation, it will not throw out any section of the present workers from their employment. There would, in fact, be more work for more persons in the Communications Service at lower rates, if only the National Planning Authority realises its proper task, and works out a programme which will simultaneously develop the economy of the country in all aspects and stages.

K. T. SHAH.

TRUNK TELEPHONE SYSTEM IN INDIA

(ADAPTED FROM P & T TELEPHONE MAP
CORRECTED UP TO 31st MARCH
1939)

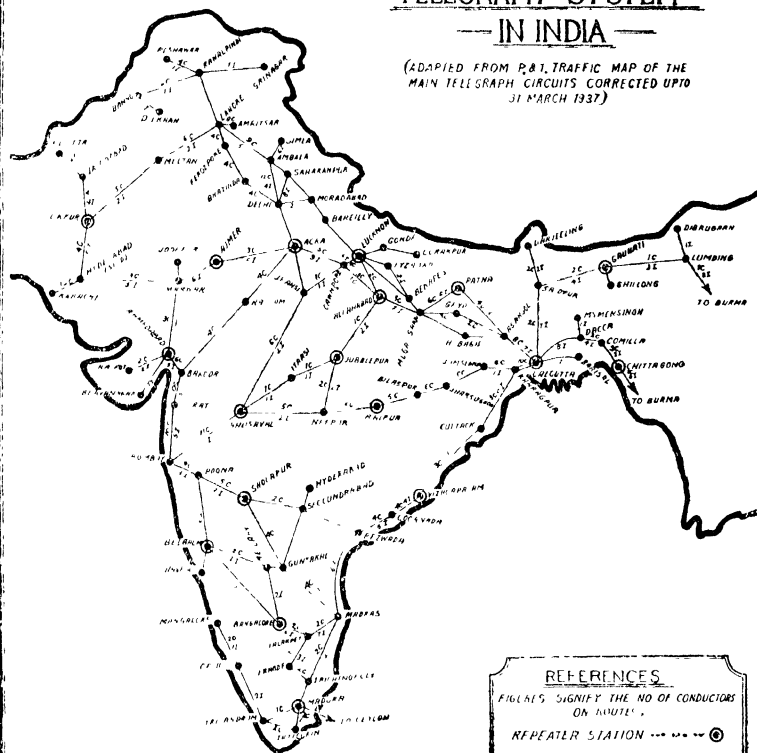


REFERENCES

EXISTING TRUNK CIRCUITS —
WORKS IN PROGRESS, OR APPROVED
REPEATER STATION ○

TELEGRAPH SYSTEM — IN INDIA —

(ADAPTED FROM P.&I. TRAFFIC MAP OF THE
MAIN TELEGRAPH CIRCUITS CORRECTED UP TO
31 MARCH 1937)



REFERENCES

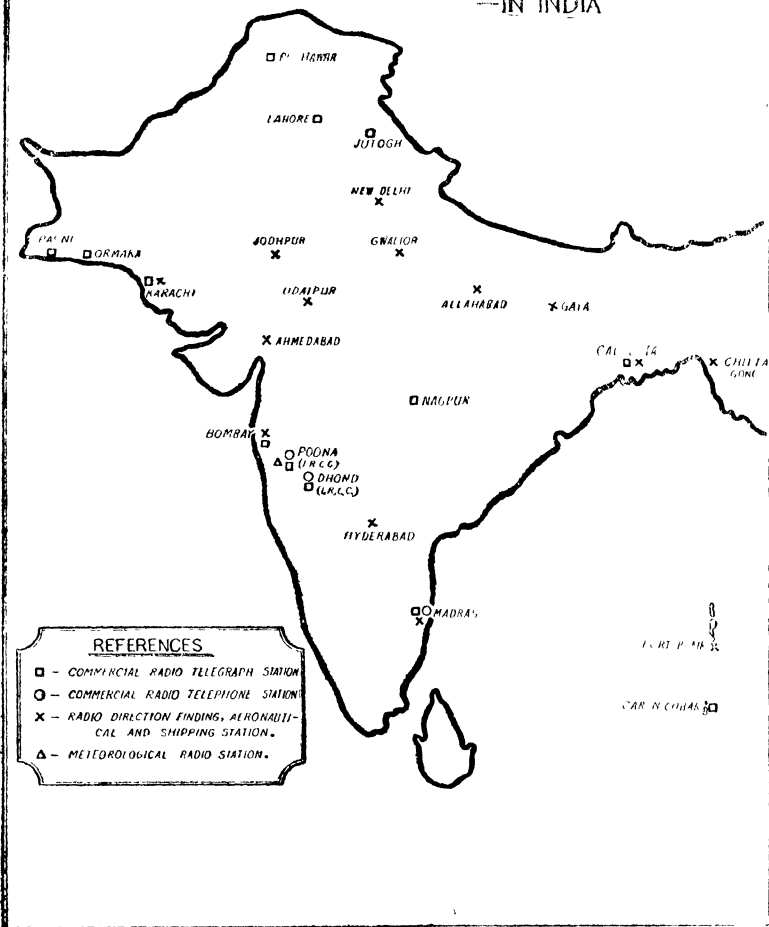
FIGURES SIGNIFY THE NO OF CONDUCTORS
ON ROUTES.

REPEATER STATION --- 000 --- 00

COPPER WIRE LINE --- 000 --- C

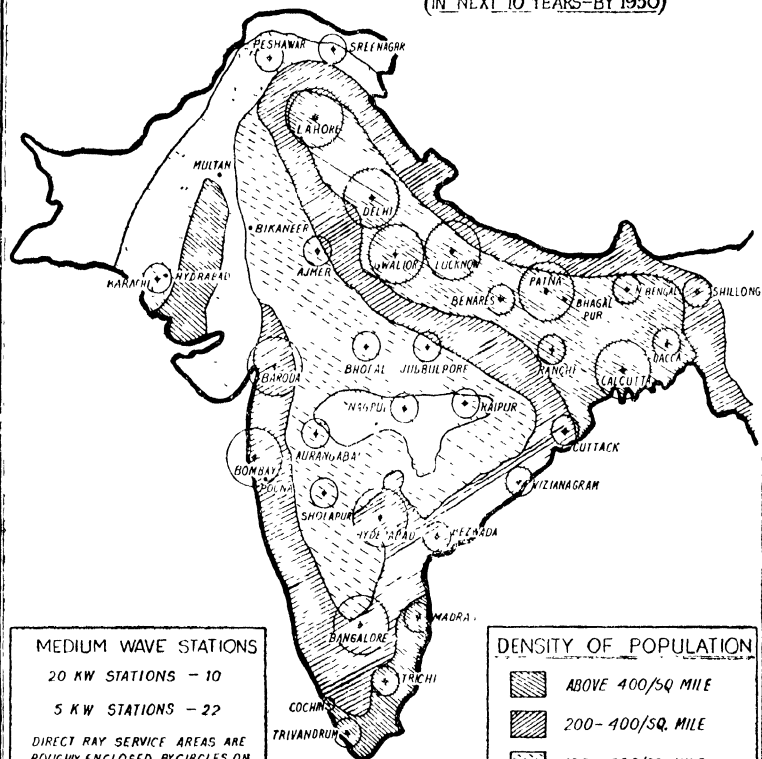
IRON WIRE LINE --- 000 --- I

RADIO COMMUNICATION STATIONS —IN INDIA



PROPOSED BROADCASTING STATIONS —IN INDIA—

(IN NEXT 10 YEARS—BY 1950)








MEDIUM WAVE STATIONS

20 KW STATIONS — 10

5 KW STATIONS — 22

DIRECT RAY SERVICE AREAS ARE ROUGHLY ENCLOSED BY CIRCLES ON ASSUMPTION OF SAME GROUND CONDUCTIVITY ON ALL SIDES (WHICH IS DIFFERENT IN ACTUAL CASE).

DENSITY OF POPULATION

-  ABOVE 400/SQ. MILE
-  200 - 400/SQ. MILE
-  100 - 200/SQ. MILE
-  50 - 100/SQ. MILE
-  1 - 50/SQ. MILE

Printed by R. R. Bakhale, at the Bombay Valbhav Press, Servants of
India Society's Home, Sandhurst Road, Girgaon, Bombay.
and
Published by M. K. Vora, for Vora and Co. Publishers Ltd.
3, Round Building, Kalbadevi Road, Bombay 2.

